IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PEGASUS DEVELOPMENT CORPORATION and PERSONALIZED MEDIA COMMUNICATIONS, LLC,	)	
Plaintiffs,	)	
v.	)	C.A. No. 00-1020 (GMS)
DIRECTV, INC., HUGHES ELECTRONICS CORPORATION, THOMSON CONSUMER ELECTRONICS, INC., and PHILIPS ELECTRONICS NORTH AMERICA CORPORATION,	)	Hon. Gregory M. Sleet
Defendants, and	)	
THOMSON MULTIMEDIA INC.,	)	
Counterplaintiff,	)	
v.	)	
PEGASUS DEVELOPMENT CORPORATION, PERSONALIZED MEDIA COMMUNICATIONS, L.L.C., TVG-PMC, INC., STARSIGHT TELECAST, INC., and GEMSTART-TV GUIDE INTERNATIONAL, INC.	)	
Counterdefendants	)	

REPORT AND RECOMMENDATION
OF SPECIAL MASTER
REGARDING CLAIM CONSTRUCTION

This case involves an assertion of infringement by defendants of six U.S. patents owned or controlled by plaintiffs. The patents relate generally to communications control systems, and,

a little more specifically, to computer control of television program distribution systems. There are many, many facets to the systems disclosed in the patents in suit. Indeed, plaintiffs have filed well over 300 patent applications, each presumably claiming distinct inventions, based upon their original patent application filed in 1981, as supplemented by a continuation-in-part application filed in 1987. The 1987 application expanded the original 1981 application from 22 to over 300 columns of patent text and is, by any measure, an extremely complex document.[1] Any effort to characterize the separately patented inventions except by reference to the actual claims of the patents is not apt to prove fruitful.

In an Order dated February 5, 2003, the Court appointed the undersigned as Special Master (SM) pursuant to Rule 53, FRCP. The specific purpose of the reference was to make "recommendations to the Court regarding the construction of the claim terms at issue." The SM was directed to "conduct a Markman hearing" and to issue a "Markman report."[2] The SM was empowered to "request and consider expert testimony or other extrinsic evidence as he deems appropriate."

Pursuant to the Order, the parties on January 27, 2003 submitted claim construction charts that identified disputed claim terms and the meaning ascribed to those terms by the respective parties. Copious briefing[3] followed, with opening briefs on February 18-19 and responsive briefs on March 10, 2003. The briefs were accompanied by massive declarations and

[1] As one of the many patent examiners involved in the prosecution of these applications was moved to complain, "the amount of effort that is required to read and absorb much/most/all of applicant's original 1987 disclosure represents nothing less than an unpleasant and difficult task." Broderick Declaration ¶9.
[2] See Markman v. Westview Instr., Inc., 52 F.3d 967, 34 USPQ2d 1321 (Fed. Cir. 1995), aff'd 517 U.S. 370, 38 USPQ2d 1461 (1996).
[3] Defendants in their opening salvo filed a separate joint memorandum for each of the six patents in suit, with a total of 173 pages. Not to be outdone, at least by much, plaintiffs filed a single brief of 164 pages. In responsive briefing, the plaintiffs submitted 111 pages and the defendants 128.These 576 pages of briefs are generally cited in this report like this: Defendants' initial brief on, e.g., the '414 patent (DIB '414 p.__); defendants' reply brief (DRB '414 p.__); plaintiffs' initial (PIB p. __) and reply brief (PRB p. __).

documentary exhibits. At the request of the SM, the parties on March 3, 2003 submitted a joint claim chart setting forth their final proposed definitions for various contested claim limitations.[4]

A hearing was held in Miami, Florida on March 19-20, 2003. The parties presented the testimony of expert witnesses and attorney argument. Upon full consideration of all matters raised during those proceedings, this report is respectfully submitted in response to the Court's directive to recommend a construction of the claims of the patents in suit.

GOVERNING LEGAL PRINCIPLES

The Legal Framework for Claim Construction

Proper claim construction necessarily precedes a determination of whether the claims read on the accused devices or methods for infringement purposes.[5] Indeed, claim construction will normally control the remainder of the decisional process,[6] for it is axiomatic that the claims must be construed in the same way for infringement that they are for determining validity.[7]

In the Markman[8] case, supra, the Supreme Court held that interpretation of patent claims is a question for the court, while application of properly construed claims to determine infringement is a question for the finder of fact. In Bell v. Covad,[9] the Federal Circuit summarized its current approach to claim construction: It looks first to the claim language itself to define the scope of the patented invention. As a starting point, it gives claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art. Accordingly, a technical term used in a patent is interpreted as having the meaning a person of ordinary skill in

[4] That 65-page document is cited to herein as "Joint Chart."
[5] E.g., Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 3 USPQ2d 1109, 1112 (Fed. Cir. 1987)
[6] Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987).
[7] E.g., Intervet America, Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 12 USPQ2d 1474, 1476 (Fed. Cir. 1989).
[8] See note 2.
[9] Bell Atl. Network Serv. Inc. v. Covad Comm. Group Inc., 262 F.3d 1258, 59 USPQ2d 1865, 1870-71 (Fed. Cir. 2001).

the field of the invention would understand it to mean. Generally, there is a heavy presumption in favor of the ordinary meaning of claim language as understood by one of ordinary skill in the art. This presumption is overcome: (1) where the patentee has chosen to be his or her own lexicographer, or (2) where a claim term deprives the claim of clarity such that there is no means by which the scope of the claim may be ascertained from the language used. In the first situation, a patentee may choose to be his or her own lexicographer and use terms in a manner other than their ordinary meaning. Therefore, the court must examine the intrinsic evidence to determine whether the patentees have given the term an unconventional meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term. In redefining the meaning of particular claim terms away from the ordinary meaning, the intrinsic evidence must clearly set forth or clearly redefine a claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term. The specification must exhibit an express intent to impart a novel meaning to claim terms. However, a claim term may be clearly redefined without an explicit statement of redefinition. Indeed, the written description of the preferred embodiments can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format. In other words, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents. Moreover, one must also examine the prosecution history to determine whether the patentee has relinquished a potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference. This history contains the

complete record of all the proceedings before the PTO, including any express representations made by the applicant regarding the scope of the claims. The prosecution history is considered to determine whether or not there were any express representations made in obtaining the patent regarding the scope and meaning of the claims. Finally, if the meaning of the claim limitation is apparent from the intrinsic evidence alone, it is improper to rely on extrinsic evidence other than that used to ascertain the ordinary meaning of the claim limitation. However, in the rare circumstance that the court is unable to determine the meaning of the asserted claims after assessing the intrinsic evidence, it may look to additional evidence that is extrinsic to the complete document record to help resolve any lack of clarity. This additional extrinsic evidence includes such evidence as expert testimony, articles, and inventor testimony. This extrinsic evidence may be used only to assist in the proper understanding of the disputed limitation; it may not be used to vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history.

In Bell v. Covad, the court explained its attitude toward dictionaries and treatises like this:

> Dictionaries and technical treatises, which are extrinsic evidence, hold a "special place" and may sometimes be considered along with the intrinsic evidence when determining the ordinary meaning of claim terms. * * * Furthermore, we have previously cautioned against the use of non-scientific dictionaries "lest dictionary definitions ... be converted into technical terms of art having legal, not linguistic significance."[10]

More recently, however, in Texas Digital v. Telegenix,[11] the court expanded on the use of such resources: When a patent is granted, prosecution is concluded, the intrinsic record is fixed, and the public is placed on notice of its allowed claims. Dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable

[10] 59 USPQ2d at 1870.
[11] Texas Digital Sys. Inc. v. Telegenix Inc., 308 F.3d 1193, 64 USPQ2d 1812, 1818-20 (Fed. Cir. 2002).

sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art. Such references are unbiased reflections of common understanding not influenced by expert testimony or events subsequent to the fixing of the intrinsic record by the grant of the patent, not colored by the motives of the parties, and not inspired by litigation. Indeed, these materials may be the most meaningful sources of information to aid judges in better understanding both the technology and the terminology used by those skilled in the art to describe the technology. As resources and references to inform and aid courts and judges in the understanding of technology and terminology, it is entirely proper for both trial and appellate judges to consult these materials at any stage of a litigation, regardless of whether they have been offered by a party in evidence or not. Thus, categorizing them as "extrinsic evidence" or even a "special form of extrinsic evidence" is misplaced and does not inform the analysis.

The Texas Digital opinion goes on to examine the relationship of dictionary definitions to the intrinsic patent record. Thus, because words often have multiple dictionary definitions, some having no relation to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor. If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings. The objective and contemporaneous record provided by the intrinsic evidence is the most reliable guide to help the court determine which of the possible meanings of the terms in question was intended by the inventor to particularly point out and distinctly claim the invention. Moreover, the intrinsic record also must be examined in every case to determine whether the presumption of ordinary and customary meaning is rebutted.

Indeed, the intrinsic record may show that the specification uses the words in a manner clearly inconsistent with the ordinary meaning reflected, for example, in a dictionary definition. In such a case, the inconsistent dictionary definition must be rejected. In short, the presumption in favor of a dictionary definition will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning. Further, the presumption also will be rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.

Finally, the Texas Digital opinion cautions against consulting the intrinsic record prior to attempting an initial determination of ordinary meaning. Consulting the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves, invites a violation of precedent counseling against importing limitations into the claims. For example, if an invention is disclosed in the written description in only one exemplary form or in only one embodiment, the risk of starting with the intrinsic record is that the single form or embodiment so disclosed will be read to require that the claim terms be limited to that single form or embodiment. Indeed, one can easily be misled to believe that this is precisely what precedent requires when it informs that disputed claim terms should be construed in light of the intrinsic record. But if the meaning of the words themselves would not have been understood to persons of skill in the art to be limited only to the examples or embodiments described in the specification, reading the words in such a confined way would mandate the wrong result and would violate the proscription against reading limitations from the specification into the claims. By examining relevant dictionaries, encyclopedias and treatises to ascertain possible meanings

that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided.

As indicated, the parties, at the invitation of the SM, presented expert testimony during the Markman hearing in this case. Indeed, the SM frequently participated in the interrogation of the experts. Nonetheless, in considering the evidence adduced through these witnesses, the SM was constantly mindful of the Federal Circuit's clear direction in Bell & Howell Doc. Man. Prod. Co. v. Altek Sys., 132 F.3d 701, 45 USPQ2d 1033, 1038 (Fed. Cir. 1998):

> Once a dispute over claim construction arises, "experts" should also not be heard to inject a new meaning into terms that is inconsistent with what the inventor set forth in his or her patent and communicated, first to the patent Examiner and ultimately to the public. Patents should be interpreted on the basis of their intrinsic record, not on the testimony of such after-the-fact "experts" that played no part in the creation and prosecution of the patent. * * * Use of expert testimony to explain an invention may be useful. But reliance on extrinsic evidence to interpret claims is proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence, *Vitronics*, 90 F.3d at 1584, 39 USPQ2d at 1578, i.e., when the intrinsic evidence is "insufficient to enable the court to construe disputed claim terms." Id. at 1585, 39 USPQ2d at 1579. Accordingly, any expert testimony that is inconsistent with unambiguous intrinsic evidence should be accorded no weight. * * *

The court also pointed out that "the testimony of an inventor often is a self-serving, after-the-fact attempt to state what should have been part of his or her patent application." Id.[12]

[12] Although in Markman the Federal Circuit stated that "the subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of a claim," this statement does not disqualify the inventor as a witness, or overrule the large body of precedent that recognizes the value of the inventor's testimony. Markman did not hold that the inventor cannot explain the technology and what was invented and claimed; the Federal Circuit held only that the inventor can not by later testimony change the invention and the claims from their meaning at the time the patent was drafted and granted. Patents are written not for laymen, but for and by persons experienced in the field of the invention. An inventor is a competent witness to explain the invention and what was intended to be conveyed by the specification and covered by the claims. The testimony of the inventor may also provide background information, including explanation of the problems that existed at the time the invention was made and the inventor's solution to these problems. Though Markman and other precedent caution the

These admonitions have conditioned the methodology employed in this proceeding. The SM made every effort to ascertain the ordinary meaning of the disputed claim terms before consulting the written description and prosecution history. Only then were those intrinsic patent documents examined to determine whether there was a clear inconsistency with ordinary meaning or a clear disavowal of claim scope.

Likewise, the parties have submitted extrinsic evidence, and the SM has considered all such evidence. An important consideration in this respect was explained by the Federal Circuit in a recent case in this way:

> While reference to intrinsic evidence is primary in interpreting claims, the criterion is the meaning of words as they would be understood by persons in the field of the invention. Patent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practitioners, lest every patent be required to be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field. Thus resolution of any ambiguity arising from the claims and specification may be aided by extrinsic evidence of usage and meaning of a term in the context of the invention.[13]

In the end, however, apart from whatever benefit this evidence may have provided in gaining an understanding of the technology at hand, and in determining whether a particular term has a well-recognized meaning in the art, it has not been relied upon in construing the claims unless specifically so indicated.[14]

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court against creative reconstruction of an invention by interested persons, courts are not novices in receiving and weighing expertise on both sides of an issue. Voice Tech. Group Inc. v. VMC Sys. Inc., 164 F.3d 605, 49 USPQ2d 1333, 1340-41 (Fed. Cir. 1999).

[13] Verve LLC v. Crane Cams Inc., 311 F.3d 1116, 65 USPQ2d 1051, 1053-54 (Fed. Cir. 2002).

[14] See Mantech Environmental Corp. v. Hudson Environmental Serv. Inc., 152 F.3d 1368, 47 USPQ2d 1732, 1737 (Fed. Cir. 1998), where the Federal Circuit held that "the district court was legally correct both in admitting and accepting the testimony of the parties' expert witnesses 'for the purpose of background in the technical area at issue,' * * * and then basing its claim construction solely upon intrinsic evidence. Although this information always may be admitted by the trial court to educate itself about the patent and the relevant technology, the claims and the written description remain the primary and more authoritative sources of claim construction. Thus, they always must be considered and where clear must be followed." See also Key Pharm. Inc. v. Hercon Labs. Corp., 161 F.3d 709, 48 USPQ2d 1911 (Fed. Cir. 1998).

The SM is also mindful of the admonition of the Federal Circuit that "claim construction is not an obligatory exercise in redundancy," and that it is unnecessary to repeat or restate every claim term in order to comply with the Markman directive that claim construction is a matter for the court.[15] Thus, where terms are expressly defined in the patent specification, it is sufficient simply to refer to that definition; the Court can decide at the time of trial whether explanatory technical testimony would be necessary or, indeed, helpful at all. And where a term is not defined or used in a special way in the specification, and is otherwise unambiguous, a jury will give the term its ordinary meaning and will presumably require no additional assistance. Certainly it is not required, for each word in a claim, to consult several dictionaries in an attempt to find a synonym that harmonizes each definition. Where the parties themselves are not able to demonstrate that dictionaries set forth conflicting or inconsistent definitions, it would not be useful for the court to expound – at the risk of confounding – the ordinary meaning of a word.

It is also important to understand that claim construction is an obligation of the court that is independent of the views asserted by the adversary parties.[16] Among them, the parties have requested consideration and construction of many, but not all, of the limitations of the claims of the patent in suit. The SM has considered each claim as a whole, and each limitation of each claim, and has recommended a specific interpretation of those terms and phrases, and only those terms and phrases, that require construction. Accordingly, to the extent various claim limitations are not addressed in this report, it may be assumed that the SM is recommending that they be grouped in the category of claim elements that need no construction. Similarly, this report is not to be viewed as reflecting an acceptance or endorsement by the SM of any proposed construction of either party, unless it expressly so states. Once again, if the report is silent as to a particular

[15] United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 41 USPQ2d 1225, 1236 (Fed. Cir. 1997).
[16] Exxon Chem. Patents Inc. v. Lubrizol Corp., 64 F.3d 1553, 35 USPQ 1801, 1802 (Fed. Cir. 1995).

limitation, that means only that the SM is suggesting that no construction is necessary, regardless of what a party may have offered as a proposed construction.

An additional word of explanation is in order regarding the claim construction methodology as it relates to ordinary meaning. Typically, when a claim term is given its ordinary meaning, it is neither required nor desirable to restate that meaning in different words. All too often that approach confuses rather than illuminates. In the present case, however, the parties in many instances argue vigorously and at length over what the ordinary meaning of a term really is. The SM has considered each such instance and, in a few of them, has concluded that the jury might be assisted rather than confused by expounding the ordinary meaning.

Means-Plus-Function Elements under 35 U.S.C. §112¶6

Pursuant to 35 U.S.C. §112¶6, "[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." An element of a claim described as a means for performing a function, if read literally, would encompass any means for performing the function. Section 112¶6 operates to cut back on the types of means that could literally satisfy the claim language to only the disclosed structure or acts and equivalents thereof.[17] But unless there is a clear basis for it in the record, it is improper to limit a means-plus-function claim to the particular means set forth in the specification. Patentees are required to disclose in the specification some enabling means for accomplishing the function, but there is no requirement that applicants describe or predict every possible means of accomplishing

[17] Johnston v. IVAC Corp., 885 F.2d 1574, 12 USPQ2d 1382, 1386 (Fed. Cir. 1989).

that function. The statute was written precisely to avoid a holding that a means-plus-function (MPF) limitation must be read to cover only the disclosed means.[18] Accordingly, each MPF limitation will be construed to cover the actual structure or acts shown in the specification for accomplishing the recited function, and equivalents thereof.[19]

Whether or not particular language in a claim defines, as a matter of law, a MPF element is not always easy to tell. If the word "means" appears in a claim element in association with a function, the court presumes that §112¶6 applies. This presumption collapses, however, if the claim itself recites sufficient structure, material, or acts to perform the claimed function. Without the term "means," a claim element is presumed to fall outside MPF strictures. Once again, however, that presumption can collapse when an element lacking the term "means" nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function.[20]

It should be noted that neither party has addressed (at least in that context) certain terms that could arguably be regarded as MPF elements. As indicated above, it is not required that a court struggle to restate every claim element in order to discharge its claim construction duties. But one must also be mindful that the Federal Circuit regards claim interpretation as an obligation of the trial judge that is independent of the views asserted by the adversary parties. In other words, it is insufficient for the judge simply to choose between the asserted constructions

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[18] D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 225 USPQ 236, 238 (Fed. Cir. 1985). It is now clear that §112¶6 also may apply to method claims containing so-called step-plus-function language. O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 42 USPQ2d 1777, 1781-82 (Fed. Cir. 1997).

[19] The determination of equivalency under §112¶6 is not part of the claim construction exercise; rather, it is a question of fact. E.g., Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 27 USPQ2d 1836, 1840 (Fed. Cir. 1993). See also IMS Tech. Inc. v. Haas Automation Inc., 206 F.3d 1422, 54 USPQ2d 1129, 1134 (Fed. Cir. 2000). The Federal Circuit has very recently explained that a structural equivalent under §112¶6 must have been available at the time of the issuance of the claim. An equivalent structure or act under §112¶6 cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161, 1168 (Fed. Cir. 1999).

[20] E.g., Micro Chem. Inc. v. Great Plains Chem. Co., 194 F.3d 1258, 52 USPQ2d 1258 (Fed. Cir. 1999).

of the parties without an independent analysis.[21] If this is so, then it must also be so that the trial judge has an obligation to identify and resolve apparent claim construction issues even if the parties do not address them. Certainly, a concession does not relieve the court of its responsibility to interpret the claims as a matter of law. To interpret the claims, the court must decide the subsidiary question of whether the claim element disputed by the parties invokes §112¶6 in the first instance. Only by undertaking this inquiry can the court ensure consistency in statutory application.[22] **Accordingly, it is recommended that there be a resolution of all potential MPF issues at this stage of the case.**

The Federal Circuit has held, unequivocally, that §112¶6 applies to method claims. As it pointed out in O.I. v. Tekmar,[23]

> The statute of course uses terms that might be viewed as having a similar meaning, namely, steps and acts. It refers to means and steps, which must be supported by structure, material, or acts. It does not state which goes with which. The word "means" clearly refers to the generic description of an apparatus element, and the implementation of such a concept is obviously by structure or material. We interpret the term "steps" to refer to the generic description of elements of a process, and the term "acts" to refer to the implementation of such steps. This interpretation is consistent with the established correlation between means and structure. In this paragraph, structure and material go with means, acts go with steps. Of course, as we have indicated, section 112, Para. 6, is implicated only when means plus function without definite structure are present, and that is similarly true with respect to steps, that the paragraph is implicated only when steps plus function without acts are present. The statute thus in effect provides that an element in a combination method or process claim may be recited as a step for performing a specified function without the recital of acts in support of the function. (Emphasis present.)

[21] Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995).
[22] Rodime PLC v. Seagate Tech. Inc., 174 F.3d 1294, 50 USPQ2d 1429, 1434 (Fed. Cir. 1999). In addition, claim construction of a §112¶6 limitation includes identifying the claimed function and determining the corresponding structure or act in the specification, both of which are questions of law. IMS Tech. Inc. v. Haas Automation Inc., 206 F.3d 1422, 54 USPQ2d 1129, 1133 (Fed. Cir. 2000).
[23] O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 42 USPQ2d 1777, 1781-82 (Fed. Cir. 1997).

Nonetheless, the Tekmar court concluded that the limitation in question was not in step-plus-function format and thus did not invoke §112¶6.[24] Indeed, it appears that the Federal Circuit has never applied §112¶6 to a method limitation.[25] It appears to be committed to a somewhat more rigid examination of whether a method limitation (as opposed to an apparatus limitation) is, as a matter of law, drafted in such a way that it clearly mirrors the statutory template. As it held in a very recent case,

> Where the claim drafter has not signaled his intent to invoke § 112, paragraph 6 by using the "step[s] for" language, we are unwilling to resort to that provision to constrain the scope of coverage of a claim limitation without a showing that the limitation contains nothing that can be construed as an act. Method claims are commonly drafted, as in this case, by reciting the phrase "steps of" followed by a list of actions comprising the method claimed. An application of §112, paragraph 6 in the present circumstances would render the scope of coverage of these method claims uncertain and disrupt patentees' settled expectations regarding the scope of their claims. * * * We thus hold that where a method claim does not contain the term "step[s] for," a limitation of that claim cannot be construed as a step-plus-function limitation without a showing that the limitation contains no act.[26]

In a concurring opinion in an earlier case,[27] Judge Rader observed that "[t]he difficulty of distinguishing acts from functions in step-plus-function claim elements, however, makes identifying step-plus-function claims inherently more problematic. This difficulty places a significant burden on the claim drafter to choose language with a definite and clear meaning. To invoke a presumption of Section 112, Para. 6 application, a claim drafter must use language that

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[24] The court concluded that the limitation was lacking the required function associated with the step. It observed that if it were to construe every process claim containing steps described by an "ing" verb, such as passing, heating, reacting, etc., as a step-plus-function limitation, it would be limiting process claims in a manner never intended by Congress. Also, just because method claims "parallel" apparatus claims that contain MPF elements does not necessarily mean that the method claims must also be construed that way. Each claim must be independently reviewed in order to determine if it is subject to the requirements of §112¶6. See also Epcon Gas Sys. Inc. v. Bauer Compressors Inc., 279 F.3d 1022, 61 USPQ2d 1470, 1475 (Fed. Cir. 2002); Generation II Orthotics Inc. v. Medical Tech. Inc., 263 F.3d 1356, 59 USPQ2d 1919, 1929 (Fed. Cir. 2001).

[25] Cf. Seal-Flex Inc. v. Athletic Track & Court Constr., 172 F.3d 836, 50 USPQ2d 1225, 1229 (Fed. Cir. 1999).

[26] Masco Corp. v. United States, 303 F.3d 1316, 64 USPQ2d 1182, 1189 (Fed. Cir. 2002).

[27] Seal-Flex, supra, 50 USPQ2d at 1233.

expressly signals the recitation of a function as distinguished from an act." He proposed a framework for analysis that has been cited favorably[28] in later decisions:

> In general terms, the "underlying function" of a method claim element corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish. "Acts," on the other hand, correspond to how the function is accomplished. Therefore, claim interpretation focuses on what the claim limitation accomplishes, i.e., it's [*sic*] underlying function, in relation to what is accomplished by the other limitations and the claim as a whole. If a claim element recites only an underlying function without acts for performing it, then Section 112, Para. 6 applies even without express step-plus-function language.
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> In sum, similar to means-plus-function claims, this court employs a straightforward analysis for identifying a step-plus-function claim. If the claim element uses the phrase "step for," then Section 112, Para. 6 is presumed to apply. Because the phrasing "step for" would appear to claim every possible act for performing the recited function, in keeping with Section 112, Para. 6, such a claim covers only the specific acts recited in the specification for performing that function, and equivalent acts. On the other hand, the term "step" alone and the phrase "steps of" tend to show that Section 112, Para. 6 does not govern that limitation. Accordingly, this court has similarly denied step-plus-function treatment to method claims which use the conventional "steps of" language.

Terms in a Claim's Preamble

Generally the preamble does not limit a claim.[29] However, statements appearing in the preamble may be necessary to give meaning to the claim and properly define the invention.[30] With all respect, this is not a particularly helpful formula for analysis. Indeed, the Federal Circuit itself has remarked that "[t]o say that a preamble is a limitation if it gives 'meaning to the claim' may merely state the problem rather than lead one to the answer."[31] That court has struggled mightily to come up a workable framework for analyzing claim preambles. Its best effort to date has been to indicate that a preamble is not limiting "where a patentee defines a structurally

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[28] See Masco Corp. v. United States, 303 F.3d 1316, 64 USPQ2d 1182, 1188-89 (Fed. Cir. 2002); Epcon Gas Sys. Inc. v. Bauer Compressors Inc., 279 F.3d 1022, 61 USPQ2d 1470, 1475 (Fed. Cir. 2002).
[29] E.g., DeGeorge v. Bernier, 768 F.2d 1318, 226 USPQ 758, 761 n.3 (Fed. Cir. 1985).
[30] E.g., Bell Comm. Research v. Vitalink Comm. Corp., 55 F.3d 615, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995).
[31] Corning Glass Works v. Sumitomo Elec. U.S.A. Inc., 868 F.2d 1251, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989).

complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention."[32]

With one exception (plaintiffs contend that a term in the preamble of claim 14 of the '243 patent is not limiting), the parties have not seemed much troubled by such concerns. They have – each side – proposed definitions for words and phrases appearing the in claim preambles, without expressed consideration as to whether those words and phrases are limitations as a matter of law. There is a great temptation for the SM to conclude that, "if it doesn't bother them, it doesn't bother me." Unfortunately, this could be viewed as a clear dereliction of the duty to construe the claims regardless of how the parties feel about them. Fortunately, on the other hand, in each instance (including '243 claim 14) that the parties are proffering definitions of preamble statements, the SM's independent analysis has led to the conclusion that the terms in question are indeed limitations, in that they either provide antecedent basis for later limitations or are necessary to understanding the remainder of the claim.

Claim Definiteness Pursuant to 35 U.S.C. §112¶2

The second paragraph of 35 U.S.C. §112 provides that the patent specification "shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the application regards as his invention." When the invention set forth in a claim is not what the patentee regarded as the invention, or is not set forth with sufficient definiteness, the

[32] Rowe v. Dror, 112 F.3d 473, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997). "Additionally, dependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention. * * * Likewise, when the preamble is essential to understand limitations or terms in the claim body, the preamble limits claim scope. * * * Further, when reciting additional structure or steps underscored as important by the specification, the preamble may operate as a claim limitation. * * * Moreover, clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention." Catalina Mktg. Int'l Inc. v. Coolsavings.com Inc., 289 F.3d 801, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002).

claim is invalid.[33] As the parties in this case are only too aware, indefiniteness under §112¶2 is a question of law that is drawn from the court's performance of its duty as the construer of patent claims.[34] In a communication dated January 28, 2003, the SM advised the parties that such issues seemed ripe for consideration during this Markman proceeding.

The Federal Circuit has not insisted that claims be plain on their face in order to avoid condemnation for indefiniteness; rather, it has asked that the claims be amenable to construction, however difficult that task may be. If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, the claim may be held indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, the claim may be sufficiently clear to avoid invalidity on indefiniteness grounds. By finding claims indefinite only if reasonable efforts at claim construction prove futile, the court accords respect to the statutory presumption of patent validity, and protects the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.[35] As the court recently explained,

> It may of course occur that persons experienced in a technologic field will have divergent opinions as to the meaning of a term, particularly as narrow distinctions are drawn by the parties or warranted by the technology. Patent disputes often raise close questions requiring refinement of technical definitions in light of particular facts. The judge will then be obliged to decide between contending positions; a role familiar to judges. But the fact that the parties disagree about claim scope does not of itself render the claim invalid.[36]

In the context of means-plus-function claiming, however, a definite legal principle has emerged: failure to describe adequately the necessary supporting structure, material, or acts in

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[33] See, e.g., Allen Eng'g Corp. v. Bartell Indus. Inc., 299 F.3d 1336, 63 USPQ2d 1769, 1775-76 (Fed. Cir. 2002).
[34] Personalized Media Comm. LLC v. United States ITC, 161 F.3d 696, 48 USPQ2d 1880, 1888 (Fed. Cir. 1998). Nonetheless, the definiteness inquiry focuses on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the rest of the specification. Union Pac. Res. Co. v. Chesapeake Energy Corp., 236 F.3d 1625, 57 USPQ2d 1293, 1297 (Fed. Cir. 2001).
[35] See Exxon Res. & Eng'g Co. v. United States, 265 F.3d 1371, 60 USPQ2d 1272, 1276 (Fed. Cir. 2001).
[36] Verve LLC v. Crane Cams Inc., 311 F.3d 1116, 65 USPQ2d 1051, 1054 (Fed. Cir. 2002).

the written description means that the drafter has failed to comply with the second paragraph of §112.[37] For a court to hold that the specification lacks a disclosure of structure in the patent specification that performs the claimed function necessarily means that the court finds the claim in question indefinite, and thus invalid. Because the claims of a patent are afforded a statutory presumption of validity, a challenge to a claim containing a means-plus-function limitation as lacking structural support requires a finding, by clear and convincing evidence, that the specification lacks disclosure of structure sufficient to be understood by one skilled in the art as being adequate to perform the recited function.[38]

The SM is aware of this Court's order of January 13, 2003 in Pharmastem Therapeutics, Inc. v. Viacell Inc., et al. (C.A. No. 02-148 GMS) in which it declined the invitation to consider an indefiniteness defense as a part of the Markman proceeding. The SM believes that refusal to have been perfectly appropriate under the circumstances, in view of the teaching of Exxon v. United States[39] and other Federal Circuit cases. Unless it is established, in clear and convincing fashion, that a claim term is insolubly ambiguous, there is no warrant for declaring the claim invalid under §112¶2 at the Markman stage of the proceedings.[40]

THE PATENTS IN SUIT

The asserted claims are claim 4 of U.S. Patent No. 4,494,490 ('490 patent), issued September 15, 1987 on an application filed November 3, 1981; claim 17 of U.S. Patent No. 4,965,825 ('825 patent), issued October 23, 1990 on an application filed September 11, 1987 that

[37] See, e.g., In re Dossel, 115 F.3d 942, 42 USPQ2d 1881, 1884-85 (Fed. Cir. 1997). If no embodiment discloses corresponding structure, the claim is invalid for failure to satisfy the definiteness requirement of §112¶2. Cardiac Pacemakers Inc. v. St. Jude Med. Inc., 296 F.3d 1106, 63 USPQ2d 1725, 1730-31 (Fed. Cir. 2002).
[38] Budde v. Harley-Davidson Inc., 250 F.3d 1369, 58 USPQ2d 1801, 1806 (Fed. Cir. 2001).
[39] See note 35.
[40] The SM does note, however, that the terms in issue in Pharmastem do not appear to have been in MPF format.

was a continuation-in-part tracing ultimately to the original '490 application; claims 1, 2, 5, and 7 of U.S. Patent No. 5,109,414 ('414 patent), issued April 28, 1992 on an application filed September 25, 1990 as a continuation of the '825 application; claims 10, 66, and 70 of U.S. Patent No. 5,233,654 ('654 patent), issued August 3, 1993 on an application filed March 10, 1992 as a continuation of the '414 application; claims 7, 12, 13, 17, and 18 of U.S. Patent No. 5,335,277 ('277 patent), issued August 2, 1994 on an application filed May 3, 1993 as a continuation of the '654 application; and claims 14, 21, 30 and 41 of U.S. Patent No. 5,887,243 ('243 patent), issued March 23, 1999 on an application filed June 7, 1995 as a continuation of an application (No. 08/113,329, filed August 30, 1993; never issued as a patent) tracing back to the '277 patent. As can be seen, all of the patents subsequent to '490 thus share an identical written description and have an effective filing date of November 3, 1981 for claimed subject matter supported by the original '490 application and an effective filing date of September 11, 1987 for claimed subject matter that was added by the '825 application.[41]

PROSECUTION OF RELATED PATENT APPLICATIONS

Separate patents issuing on a chain of related applications, like those described above, are not unusual. There is, however, an aspect of this in the present case that is rather unusual. According to defendants, the application that matured into the '243 patent was but one of *328 separate patent applications that were filed between March 2, 1995 and June 7, 1995 as continuations of the same parent application 08/113,329.* Thus, as of June 7, 1995 there were 329 pending patent applications (the parent and the 328 new ones) pending, all with identical specifications. The only one of these 329 applications that has issued to date, apparently, is the

[41] See Transco Prods., Inc. v. Performance Contr., Inc., 38 F.3d 551, 32 USPQ2d 1077, 1080 (Fed. Cir. 1994).

'243 patent.[42] Serious questions are sure to be encountered in this case as to whether such conduct is more than just unusual – whether it does, indeed, affect the validity or enforceability of any of the asserted patents.

For present purposes, however, it is important to recognized that the Federal Circuit has observed that, in general at least,

> [T]here is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application. Any such amendment or insertion must comply with all statutes and regulations, of course, but, if it does, its genesis in the marketplace is simply irrelevant * * *.[43]

Indeed, the Federal Circuit has described a patent owner's behavior in "manipulating its secret pending patent application to cover the functionally competitive structure it did not think of but deems to embody its proprietary 'inventive concept'" as "classic commercial gamesmanship under the patent system."[44]

Nonetheless, abuses of continuation practice – real or perceived – have recently been receiving increased scrutiny by the Federal Circuit. One result has been an affirmation that the doctrine of prosecution laches may intervene to rectify such abuses.[45] On a related front, that court has reemphasized that failure to find adequate support for a claim in the specification provides a free-standing defense of lack of an adequate written description under §112¶1.[46] Although one suspects that defendants intend to press these potential defenses – to say nothing of an inequitable conduct defense[47] based on the same circumstances – by way of summary

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[42] Broderick Declaration ¶¶13-18.
[43] Kingsdown Med. Cons. Ltd. v. Hollister Inc., 863 F.2d 867, 9 USPQ2d 1384, 1390 (Fed. Cir. 1988).
[44] State Industries, Inc. v. A.O. Smith Corp., 751 F.2d 1226, 224 USPQ 418, 424 (Fed. Cir. 1985).
[45] See In re Bogese, 303 F.3d 1362, 64 USPQ2d 1448 (Fed. Cir. 2002); Symbol Tech. Inc. v. Lemelson Medical, 277 F.3d 1361, 61 USPQ2d 1515 (Fed. Cir. 2002).
[46] See Enzo Biochem Inc. v. Gen-Probe Inc., 296 F.3d 1315, 63 USPQ2d 1609 (Fed. Cir. 2002).
[47] See DIB '243 p. 4: "The inequitable-conduct implications of these prosecution tactics are a topic for another day."

judgment motions or at trial, defendants attempt to use this conduct in the context of this Markman proceeding to bolster their defenses of claim indefiniteness under §112¶2. To that end, they submitted, in connection with their initial brief on the '243 patent, a massive declaration of attorney Christopher P. Broderick (Broderick I). In their responsive brief on the '243 patent, they included an appendix supported by another hefty Broderick declaration (Broderick II). They characterize these declarations as establishing that the '243 patent "contains claim verbiage (including verbiage in the claims here asserted) that is identical and virtually identical to verbiage that, in parallel cases, was rejected for indefiniteness and/or for lack of specification support – by dozens of examiners." (DIB '243 p. 4; emphasis in original) And again, that "after examination of dozens of virtually-identical claims containing [certain limitations] in conjunction with the '243 and parent specifications, by dozens of examiners in the PTO, the overwhelming consensus is that the [limitations] are not adequately explained in the specification and not understood by persons possessing ordinary skill in the art." (DRB '243 p. 27) Suffice it to say, for present purposes, that the parallel prosecution of related applications is relevant only in one respect, and that is claim construction. Questions of enablement, support, and adequacy of written description, under §112¶1, and, to the extent the claims are not "insolubly ambiguous," definiteness under §112¶2, are obviously not ripe for resolution in this Markman proceeding. Accordingly, evidence relating to prosecution of related applications has been considered, if at all, only insofar as it may have some probative value on the fundamental claim construction issues presented here.

DISCUSSION

As indicated at the outset, the patents in suit claim various aspects of an extremely long and comprehensive invention disclosure. Plaintiffs' précis is probably as good as any:

> The patent claims discussed in this brief are directed to various facets of the disclosed system. The asserted claim of the '490 patent, for example, is directed to a receiver station and the technique used by that station to process received signals to provide overlays. The asserted claims of the '825 patent are addressed to the ability of the disclosed system to control apparatus at the receiver site. The asserted '414 patent claims are directed to the intermediate transmission station of the disclosed system, that is, the facility that receives programming from various sources and retransmits it, along with digital information, to receiver stations at subscriber homes and businesses. The asserted claims of the '654 patent are directed to the ability to remotely collect data from receiver sites for billing or other purposes. The asserted '277 patent claims are directed to signal processing, data processing, and decryption techniques, among other things. And the asserted claims of the '243 patent are directed to the disclosed system's ability to provide an interactive or multimedia television experience. (PIB p.3)

The claims of these patents are not very informative, at least to the casual reader. That is to say, they give little or no hint as to what kind of commercial system might embody or infringe the various claim limitations. This is not, however, unusual in patents that claim portions of very large systems. As a consequence, the SM apologizes for not having attempted to characterize, in language understandable to those not skilled in this technology, the essential gist of the claimed inventions. As justification, the SM can only take solace in several Federal Circuit rubrics that may be thought to excuse any dereliction of duty in this respect: (1) claim construction is carried out without regard for the accused infringement,[48] (2) it is not necessary that a claim recite each and every element needed for the practical utilization of the claimed subject matter,[49] and (3) perhaps most important, there *is* no legally recognizable or protected gist or heart of the invention.[50]

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[48] E.g., Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 42 USPQ2d 1589, 1592 (Fed. Cir. 1997).
[49] Stiftung v. Renishaw PLC, 945 F.2d 1173, 20 USPQ2d 1094, 1100-01 (Fed. Cir. 1991). A patent may have subcombination claims drawn to only one aspect or combination of elements of an invention that has utility separate and apart from other aspects of the invention. So long as the recited structure is capable of performing its claimed purpose, greater utility or more definite claiming is not required. Id. A claim is not defective when it states fewer than all of the steps that may be performed in practice of an invention. Smith & Nephew Inc. v. Ethicon Inc., 276 F.3d 1304, 61 USPQ2d 1065, 1069 (Fed. Cir. 2001).
[50] E.g., Everpure, Inc. v. Cuno, Inc., 875 F.2d 300, 10 USPQ2d 1855, 1857 (Fed. Cir. 1989).

It should be recognized, as well, that the asserted claims of the patents in suit are extremely broad – viewed from the standpoint of ordinary meaning – and the recommended constructions of the specific terms of those claims are likely to be correspondingly broad, absent evidence, in the intrinsic patent documents, of an unmistakable relinquishment of that breadth. That such constructions may expose the claims to attack on grounds of lack of enablement or inadequate supporting written description under §112¶1, or even invalidity for lack of novelty or obviousness under §§102 and 103, are concerns for another day. Although it is appropriate *if possible* to construe claims to preserve their validity,[51] it is not often possible to do that within the confines of a Markman proceeding, where such defenses are not, and cannot be, sufficiently developed to provide a rationale for narrower construction.[52]

Claim construction begins, as it must, with the words of the claims.[53] The claims of the patents in suit, together with the positions of the parties relative to disputed claim elements, are set out in the Joint Claim Chart that the parties have prepared for the convenience of the Court and the SM.[54] In the discussion that follows, certain claim terms or elements may be common to different claims, sometimes in different patents. It may be assumed, unless expressly stated otherwise, that the discussion applies to all occurrences of such terms or elements.[55]

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[51] Tate Access Floors Inc. v. Interface Arch. Res. Inc., 279 F.3d 1357, 61 USPQ2d 1647, 1654, 1658 (Fed. Cir. 2002).

[52] In this context, the appellate court often has the advantage over the trial court, in that the invalidity defenses may be well-developed by the time a case reaches that level. The trial court, on the other hand, usually cannot know, at the time of a Markman proceeding, whether a particular construction of a term would "save" the patent or not. Perhaps this reality argues for taking on the task of claim construction at a later stage in the proceedings, either concurrently with dispositive motions or as part of the preparations for instruction of the jury.

[53] Vehicular Tech. Corp. v. Titan Wheel Int'l, 141 F.3d 1084, 46 USPQ2d 1257, 1260 (Fed. Cir. 1998).

[54] Owing to its length, the Joint Claim Chart is not attached, but it is incorporated herein and made a part hereof.

[55] Where multiple patents have identical disclosures, it is appropriate to construe their claims in pari materia, absent some indication that the limitations should be construed differently for some claims than for others. See Ballard Med. Prods. v. Allegiance Healthcare Corp., 268 F.3d 1352, 60 USPQ2d 1493, 1500 (Fed. Cir. 2001). When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any

A. Level of Skill in this Art

Inasmuch as the claims of the patents in suit must be considered from the viewpoint of a hypothetical person of ordinary skill in the art, both for construing[56] the claims and assessing their adequacy under §112¶2,[57] an important first step is to attempt to flesh out this phantom by assigning some values to characteristics such as education and experience. The patented systems comprehend a broad range of electronics expertise, in that they involve, in the words of the patents themselves, such fields as "computer processing, computer communications, television, radio, and other electronic communications; the fields of automating the handling, recording, and retransmitting of television, radio, computer, and other electronically transmitted programming; and the fields of regulating, metering, and monitoring the availability, use, and usage of such programming." (E.g., '825 C1L16-22) [58] The engineering of such systems is usually approached by assembling a team of workers, and the individual skills of the members of such a team are usually not extraordinary. The patent law requires, however, that we make some attempt to distill a typical profile from this amalgam of persons and skills. After hearing the testimony of the parties' experts (Tr. 41, 155) , the SM feels comfortable in recommending that **the claims be assessed and construed from the standpoint of a person having at least the equivalent of a first college degree in digital electronics or electrical engineering, and several years of post-degree experience in the engineering of communications or control systems.**

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patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation. Biovail Corp. Int'l v. Andrx Pharm. Inc., 239 F.3d 1297, 57 USPQ2d 1813, 1816 (Fed. Cir. 2001).

[56] E.g., Bell Atl. Network Serv. Inc. v. Covad Comm. Group Inc., 262 F.3d 1258, 59 USPQ2d 1865, 1870-71 (Fed. Cir. 2001).

[57] E.g., Budde v. Harley-Davidson Inc., 250 F.3d 1369, 58 USPQ2d 1801, 1806, 1809 (Fed. Cir. 2001).

[58] This citation format, used throughout this report, indicates that the material will be found at lines 16-22 of column 1 of the '825 patent.

B. The Timing of the Inquiry

The Federal Circuit has itself noted that "[o]ur decisions have not always been consistent as to whether the pertinent date [for construing the claims] is the filing date of the application or the issue date of the patent."[59] That, with all respect, is something of an understatement. In Markman itself, the court said "the focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean."[60] A few years later, the court remarked that an inventor cannot "by later testimony change the invention and the claims from their meaning at the time the patent was drafted and granted."[61] Shortly thereafter, the court observed that "the literal meaning of a claim is fixed upon its issuance."[62] But a year after that, it held that "this court must determine what the term meant at the time the patentee filed the [patent] application," and thus refused to consider information that had been published several months after the filing date of the application.[63] The next year, the court held that when a claim term understood to have a narrow meaning when the application is filed later acquires a broader definition, the literal scope of the term is limited to what it was understood to mean at the time of filing.[64] Finally, in a case[65] decided only months ago, we find the court telling us, in no uncertain terms, that

> When a patent is granted, prosecution is concluded, the intrinsic record is fixed, and the public is placed on notice of its allowed claims. Dictionaries,

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[59] Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp., 309 F.3d 1365, 64 USPQ2d 1926, 1930 n.1 (Fed. Cir. 2002).
[60] Markman v. Westview Instr., Inc., 52 F.3d 967, 34 USPQ2d 1321, 1335 (Fed. Cir. 1995), aff'd 517 U.S. 370, 38 USPQ2d 1461 (1996).
[61] Voice Tech. Group Inc. v. VMC Sys. Inc., 164 F.3d 605, 49 USPQ2d 1333, 1341 (Fed. Cir. 1999).
[62] Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161, 1168 (Fed. Cir. 1999).
[63] Schering Corp. v. Amgen Inc., 222 F.3d 1347, 55 USPQ2d 1650, 1654 (Fed. Cir. 2000). The court did, however, seem to leave room for the possibility that the date of invention, if it as a matter of record preceded the filing date, might be appropriate.
[64] Kopykake Inter. Inc. v. Lucks Co., 264 F.3d 1377, 60 USPQ2d 1124, 1127 (Fed. Cir. 2001). It should be noted that the court would probably have used the date of invention rather than the filing date if a prior date of invention had been established on the record. See also Plant Genetic Sys. N.V. v. DeKalb Genetics Corp., 315 F.3d 1335, 65 USPQ2d 1452, 1460 (Fed. Cir. 2003).
[65] Texas Digital Sys. Inc. v. Telegenix Inc., 308 F.3d 1193, 64 USPQ2d 1812, 1818 (Fed. Cir. 2002).

> encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art.

In many cases, the chronological reference point for the claim construction inquiry will not be determinative, in that nothing relevant may have surfaced between the time of filing (or invention) and the date of issue. In the present case, however, that happy situation does not necessarily prevail. As discussed previously, the application that led to the '490 patent was filed in 1981, and that patent itself issued in 1987. The expanded application that led to the other patents in suit was filed in 1987, just before the '490 patent issued, and the various patents issued anywhere from 1990 to 1999. Those time periods between filing and issue leave plenty of time for relevant material to intervene, particularly in a fast-moving technology like the subject of the patents.

Consequently, the SM feels obliged to select the an appropriate chronological reference point and to recommend that selection to the Court in this case. The actual date of invention seems ill-advised as a choice, because in many cases it is not otherwise in issue, and it would not serve the interests of judicial economy to have to decide, in a large proportion of Markman proceedings, the difficult question of precisely when the invention was made. Moreover, in the absence of evidence of an actual date of invention, the filing of an application serves as a constructive reduction to practice, thus fixing the date of invention.[66] The filing date is a seemingly reasonable choice as the appropriate reference point, if for no other reason than it is not a variable date, like the issue date, that depends upon the length of the prosecution. However, in the opinion of the SM, using the filing date as the point in time as of which the meaning of the claims must be ascertained would, if rigidly observed, require the court to ignore the prosecution

[66] E.g., Hyatt v. Boone, 146 F.3d 1128, 47 USPQ2d 1128, 1130 (Fed. Cir. 1998).

itself, which of course occurs *after* the application is filed. For this reason, and for the additional reason that the most recent pronouncement of the Federal Circuit instructs that the dictionaries and treatises that are to be consulted in determining ordinary meaning are those existing as of the date the patent issues, **it is recommended that the Court construe the claims as they would have been understood by a person of ordinary skill in the art when the patent issued.**

C. System Claims – Means-Plus-Function Treatment under 35 U.S.C. §112¶6

Several of the asserted system or apparatus claims of the patents contain limitations that are presumptively in MPF format: claims 1, 2, 5, and 7 of '414, and claims 10, 66, and 70 of '654. The parties are definitely at odds with respect to the applicability of §112¶6 to many of these limitations. With respect to the claims of the '414 and '654 patents, defendants assert that all but one ("processor means") of the limitations that employ the signal "means for" are to be construed as MPF limitations. Plaintiffs, on the other hand, argue that none of those limitations in the '414 patent, despite use of the presumption-creating signal, is truly in MPF format.[67] As for the '654 patent, plaintiffs take essentially the same position, except that they do concede that two "means for" limitations ("memory means" and "recorder means") should be accorded §112¶6 treatment. In many instances both sides hedge their bets against the possibility that their asserted positions will not win out and propose alternative constructions.

In some instances, the limitations in question, in the view of the SM, clearly invoke §112¶6. These are limitations in which neither the adjective modifier preceding the "means for" signal (e.g., "input means for"; '654 claim 10) nor the recited function ("inputting member information") gives a clue as to any supporting structure. Consequently, the presumption that

[67] The SM finds plaintiffs' intractability in this regard unhelpful, to say the least. In most instances they are unable to point to any grounds in the intrinsic patent record for overcoming the presumption created by the incantation "means for."

§112¶6 applies cannot be overcome as to those limitations. In other instances, the matter is not so clear, inasmuch as either the modifier (e.g., "processor means"; '414 claim 1) or the functional recitation ("for identifying each detected control signal as having been detected by a particular detector means") provides at least some basis for structural support. In the discussion that follows, the SM has grouped the functional limitations into those that clearly invoke §112¶6 and those that at least presumptively so do. Any terms in the functional recitations that are in dispute or require construction are also discussed in this section.

Limitations that Clearly Invoke §112¶6

Receiver/Distribution Means ('414 all claims). The limitation is "a plurality of receiver/distribution means for receiving programming from a program source and for inputting said programming to a switch means and a plurality of detector means." The term "receiver/distribution" as a modifier for means conveys no information about the structure of the means – only its function: receiving and distributing. The specified function is likewise not informative in this regard. Saying that a device receives programming from a source and inputs it to a switch and a plurality of detectors says nothing about the structure of the device. **Accordingly, "receiver/distribution means" should be construed to mean the various receiver types 53-62 shown in Fig. 6A of the '414 patent, with associated antennae and conductors,[68] and equivalents that were known at the time the patent issued.[69]** The recited function needs no construction except for the terms "switch means" and "detector means" which are treated below.

[68] Plaintiffs take the position (PRB pp. 26-28) that the supporting structure does not include an antenna and conductors. But without those elements, the "receiver/distribution means" could hardly receive programming from a program source and input the programming to a switch and a plurality of detectors, as required by the functional portion of the limitation.
[69] See Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161, 1168 (Fed. Cir. 1999).

Storage Means ('414 claim 1), Storage/Transfer Means ('414 claims 5 and 7) and Memory Means ('654 all claims). In each instance in the '414 patent the recited function is "for receiving and storing said detected control signals." Claims 5 and 7 of that patent provide for an additional function of "transferring at least a portion of said control signals for further processing." The functional recitation of the '654 claims is "for storing said input information." Claim 10 also calls for a "second memory means for storing said data." Nothing in the words "storage," "storage/transfer," or "memory" implies any particular structure, nor do the functional recitations. In the '414 patent the elements that receive and store control signals and transfer them are a RAM or PRAM ('414 C20L23-27). **Accordingly, these limitations in the '414 patent should be construed to mean a RAM or a PRAM, and equivalents thereof that were known when the patent issued.** The functional recitations need no construction.

The parties are in essential agreement as to the elements disclosed in the '654 patent that perform the function of storing the input information and the data that is output from the processor. **Accordingly, these limitations should be construed to mean a RAM, EPROM, buffer, comparator, floppy disk, register, or computer memory, and any equivalents that were known when the patent issued.** The functional recitations require no construction.

Switch Means ('414 claims 1 and 2). Certainly the word "switch" does not imply any particular structure. From the recited functions[70] we know that the switch must be configured to receive information from any of a plurality of outputs and direct a portion of that information to an associated output device, but this really says nothing about the structure of the switch, or not

[70] The claimed functions are "receiving output from a plurality of receiver/distribution means" and "directing a selected portion * * * to an associated output device."

enough, at least, to overcome the presumption that §112¶6 should apply.[71] **Accordingly, this limitation should be construed to mean the matrix switch 75 disclosed in the specification,[72] and equivalents known at the time the patent issued.** The recited functions need no construction except for the term "receiver/distribution means" which has been addressed above.

Transmission Means ('654 all claims). The parties are agreed[73] on the construction of this limitation, and the SM believes that their agreement reflects a proper legal construction. **Accordingly, this limitation should be construed, pursuant to §112¶6, to mean a connection to a telephone network or a data transfer network, and equivalents known as of the issue date of the patent.** The functional recitation ("transmitting said data to said data collection station") requires no construction.

Input Means ('654 all claims). The parties are agreed that this is a MPF limitation and they are correct: the modifier "input" describes only a functional attribute and the accompanying functional recitation – "for inputting member information" – suggests no specific structure. Plaintiffs suggest that the corresponding structure is "local input 225." However, if the specification were truly this uninformative about the structure of the "input means," the claims might well be invalid under §112¶2 (see the foregoing discussion of claim definiteness). Fortunately, the specification is not fatally terse in this respect. In discussing the local input 225, it says:

> In the preferred embodiment, local input, 225, is actuated by keys that are depressed manually by the subscriber in the fashion of the keys of a so-called touch-tone telephone or the keys of a typewriter (or microcomputer) keyboard. As FIG. 4 shows, microcomputer, 205, also has capacity for inputting control

[71] We also know, from the last limitation of claim 1 ("a second processor means for controlling the output directing function of said switch means") that the directing function of the switch means must be externally controllable, but again this says little or nothing about the actual physical structure of the switch means.
[72] The parties are agreed that the supporting structure is the matrix switch 75 in Fig. 6A of the '414 patent.
[73] Joint Chart p. 40.

> information to microcomputer, 205, via decoder, 203, and in the preferred embodiment, microcomputer, 205, may also automatically substitute for local control, 225, in predetermined fashions in inputting control information to said controller, 20, on the basis of preprogrammed instructions and information previously inputted to said microcomputer, 205. ('654 C160L32-44)

The specification also provides for input of information to the microcomputer 205 through a modem ('654 C248L60-C249L28). **Accordingly, "input means" should be construed to mean telephone keypads, typewriter or microcomputer keyboards, and microcomputers that are preprogrammed with information or receive it from a modem, as well as equivalents that were known when the patent issued. The functional recitation needs no construction inasmuch as its ordinary meaning is clear: member information is information from or about a member.**

Recorder Means ('654 claims 66 and 70). The word "recorder" as a modifier says nothing about structure. The recited function of this limitation is "for storing said output records on a memory medium." This is obviously the function of any "recorder means," and likewise implies no particular structure. The element in question,

> [d]igital recorder, 16, is a memory storage element of standard design that receives information from buffer/comparator, 14, and records said information in a predetermined fashion. In a predetermined fashion, recorder, 16, can determine how full it is and transmit this information to controller, 20. Recorder, 16, may inform controller, 20, automatically when it reaches a certain level of fullness. ('654 C18L53-60)

Accordingly, the §112¶6 presumption is not overcome, and this limitation should be construed to mean a memory storage device of standard design capable of recording digital information, and of determining how full the store is and of informing a controller when it reaches a certain level of fullness, together with equivalents known as of the issue date of the '654 patent.

Limitations that Presumptively Invoke §112¶6

Detector Means and Control Signal Detector Means ('414 all claims; '654 all claims). In Personalized Media Comm. LLC v. United States ITC, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998), the Federal Circuit had occasion to construe the claims of the same '277 patent that is asserted in this case. The limitation in question was a "digital detector," and the court concluded that the ITC had erred in treating it as a MPF limitation. The court reasoned that the clause did not use the signal "means," thereby creating a presumption that it was not to be accorded §112¶6 treatment. It then concluded that

> [e]ven though the term "detector" does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as "detectors." We therefore conclude that the term "detector" is a sufficiently definite structural term to preclude the application of Section 112, Para. 6.
>
> Much of the ALJ's analysis (and the Commission's arguments to this court) centered around the ambiguity raised by the phrase "digital detector." However, an adjectival qualification ("digital") placed upon otherwise sufficiently definite structure ("detector") does not make the sufficiency of that structure any less sufficient for purposes of Section 112, Para. 6. Instead, it further narrows the scope of those structures covered by the claim and makes the term more definite. The use of the word "digital" in conjunction with the word "detector" merely places an additional functional constraint (extraction of digital information) on a structure (detector) otherwise adequately defined. 48 USPQ2d at 1888.

Although this holding might not have preclusive effect, at least with respect to all parties, under ordinary principles of res judicata,[74] there is no denying its powerful stare decisis impact.

[74] In affirming the Federal Circuit's Markman holding that claim construction is a question of law exclusively within the province of the court, the Supreme Court made it clear that claim construction holdings as to a particular patent will not normally result in issue preclusion against new accused infringers, even within the same jurisdiction. However, it strongly signaled an expectation that stare decisis would play a significant role in promoting uniformity in claim construction as to a given patent. Markman v. Westview Instr., Inc., 517 U.S. 370, 38 USPQ2d 1461, 1471

Accordingly, although the SM considers the matter to be a close question indeed,[75] this report later recommends that the limitation "digital detector" in the asserted claims of the '277 patent be so construed. That does not, however, end the matter for the claims of the '414 and '654 patents, for they do employ the signal "means," thereby presumptively invoking §112¶6. Indeed, defendants urge that the limitations be construed under §112¶6. (Joint Chart, pp. 7, 39)

Nonetheless, it is not clear how this circumstance can be distinguished from the Federal Circuit holding that the term "detector" connotes sufficient structure to escape MPF treatment. If the term "detector" is itself sufficiently structural, then it would seem to be sufficiently so to overcome the presumption. The additional modifier "control signal" in certain limitations, to paraphrase the Federal Circuit's analysis, merely places an additional functional constraint (detection of control signals) on a structure (detector) otherwise adequately defined. **Accordingly, this limitation should not be construed under §112¶6, but should be construed to mean a detector, as that term is generally understood by persons of ordinary skill in this art.**

The functional recitation of "detecting" was not directly addressed by the Federal Circuit in Personalized Media. It did, however, cite with approval a dictionary definition of "detector" that had been relied upon below: "(1) : a device for determining the presence of a signal (2) : a rectifier of high-frequency current (as a cat whisker and crystal or a vacuum tube) (3) : a device for extracting the intelligence from a signal (4) DEMODULATOR 1." 48 USPQ2d at 1887 n.

(1996). The Federal Circuit has since made it clear that its decisions on claim construction have a national stare decisis effect. Key Pharm. Inc. v. Hercon Labs. Corp., 161 F.3d 709, 48 USPQ2d 1911, 1916 (Fed. Cir. 1998).

[75] The SM has doubts about the correctness of the Federal Circuit's conclusion that the term "digital detector" connotes sufficient structure to remove it from the ambit of §112¶6. There are many structures that could qualify as a digital detector, and many more to be invented. The Federal Circuit itself recognized that failure to employ the signal "means" is not conclusive. "These presumptions can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." 48 USPQ2d at 1888. See Mas-Hamilton Group Inc. v. LaGard Inc., 156 F.3d 1206, 48 USPQ2d 1010, 1017 (Fed. Cir. 1998) (holding that the claim language "lever moving element for moving the lever" invokes §112¶6).

12. These definitions describe the functions of an electronic device known as a detector. Plainly, from the context of the claim as a whole, the most apt functional definition is extracting the intelligence from a signal. **Accordingly, it is recommended that "detecting" be construed to mean "extracting intelligence from a signal."**

Processor Means ('414 all claims; '654 all claims). The parties are in agreement that the term "processor means" does not invoke §112¶6.[76] The SM agrees with this assessment. Although the signal "means" raises the presumption of MPF treatment, the term "processor" is one that is well understood in the electronics and communications fields to have certain structural attributes that support its functional capability of processing information. This is sufficient to overcome the presumption and remove the limitation from the ambit of §112¶6.

Plaintiffs assert that the meaning of "processor" is "a circuit or collection of circuits that executes instructions." Defendants contend that it means "any circuit or device that performs logical step(s) on input data." (Joint Chart p. 47) The parties, in the context of various occurrences of the word "processor" in the claims of the several patents in suit, cite to many possible definitions, ranging over a wide spectrum. Too broad a definition could comprehend simple hard-wired logic elements that are far removed from the notion of a "processor." Yet too narrow a definition would not comport with the examples in the specification or the dictionary definitions, which are quite broad.[77] The SM feels that the Court should favor the center of this spectrum, according the word "processor" the breadth that it is due without reading it so broadly as to include virtually every active electronic circuit element. **Accordingly, this limitation should be construed to mean a digital electronic device that processes information by**

[76] Joint Chart p. 9.
[77] See, e.g., the definitions set forth by defendants in addressing the '277 patent (DIB '277 pp. 25-26).

operating on data according to instructions. It is recommended that this definition be used for all occurrences of the word "processor" in the asserted claims of all the patents in suit.

The associated functional recitations need no construction except to the extent that they employ terms that are treated elsewhere in this report.

Broadcast Transmission Means ('414 claims 5 and 7). This limitation does not include a separate, freestanding functional recitation; in other words, it lacks the telltale "means for" signal. From this plaintiffs argue that it is not a MPF limitation. Nonetheless, the modifying words, "broadcast transmission" are purely functional, specifying the function of the claimed means without recitation of supporting structure. This limitation invokes §112¶6.[78] In the context of this technology, the function implied by the words "broadcast transmission" is the ordinary meaning of those words: transmitting information from one location to multiple locations. Thus, it should be a straightforward exercise to identify the structure that supports this function.

Unfortunately, this is not the case, because the parties appear to differ over the meaning of the term "broadcast." Plaintiffs argue that "the applicants acted as their own lexicographer in carefully distinguishing 'broadcast' from 'cablecast' in the '414 patent specification. * * * 'Broadcast' was specifically limited to over-the-air transmissions, while 'cablecast' referred to hard-wire transmissions." (PRB p. 34) On the surface of things, this is true. The specification tells us that the "programming may be delivered by any means including over-the-air, hard-wire, and manual means. The stations may transmit programming over-the-air (hereinafter, 'broadcast') or over hard-wire (hereinafter, 'cablecast')." ('414 C8L64-67) Defendants, however, are quick to point out that, thereafter, the specification vacillates on this usage. For example,

[78] See Signtech USA Ltd v. Vutek Inc., 174 F.3d 1352, 50 USPQ2d 1372, 1374-75 (Fed. Cir. 1999) ("Ink delivery means" is equivalent to "means for ink delivery" in the context of determining whether it should qualify for MPF treatment under §112¶6); Kemco Sales Inc. v. Control Papers Co., 208 F.3d 1352, 54 USPQ2d 1308, 1313 (Fed. Cir. 2000) ("plastic envelope closing means" held to be a MPF limitation).

some 130 columns later, it tells us that "[s]ignal processor, 200, is preprogrammed with information that identifies each cable and over-the-air (hereinafter, wireless) transmission or frequency in the locality of the subscriber station of FIG. 3 as well as the standard broadcast and cablecast practices that apply on said transmissions and frequencies." ('414 C139L55-60) Thus, it introduces a new term, "wireless," and frequently employs that term in juxtaposition to cable transmissions. (See DRB '414 p. 18)

The SM personally examined each occurrence of the words "broadcast," "cablecast," and "wireless" in the '414 patent and found that there was no consistency in usage. However, when the specification turned to a description of the intermediate stations, it left little doubt as to what was meant:

> The signal processing apparatus outlined in FIGS. 2, 2A, 2B, 2C, and 2D, and their variants as appropriate, can be used to automate the operations of intermediate transmission stations that receive and retransmit programming. The stations so automated may transmit any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may range in scale of operation from wireless broadcast stations that transmit a single programming transmission to cable systems that cablecast many channels simultaneously. ('414 C181L65-C182L6; emphasis added)

So too when the discussion turned to ultimate receiver stations:

> The programming so displayed (or outputted) may be any form of electronically transmitted programming, including television, radio, print, data, and combined medium programming and may be received via any electronic transmission means including wireless and cable means. ('414 C218L17-22; emphasis added)

These statements leave no doubt that "broadcast transmission" as used in the claims is broader than simply wireless transmissions, and would include cable transmissions as well.

The question then becomes what is the structural means that underlies the function of transmitting information from one location to multiple locations. Certainly one such structure is

the cable field distribution system disclosed in connection with the automated intermediate transmission station. Plaintiffs point to no corresponding structure supporting a wireless broadcast transmission, but it may well be that such systems are notorious in the art and need no structural explication.

Accordingly, this limitation should be construed to mean a cable field distribution system or equivalent wireless system, known at the time the patent issued, for transmitting information from one location to multiple locations.

Buffer/Memory Storage Means ('414 claim 2). It might, at first glance, be supposed that the addition of the word "buffer" should differentiate this limitation from the "storage means" of claim 1 of the '414 patent. It is possible that the word might imply some structure to those of skill in the art. The problem, however, is that the specification is silent on the meaning of the term "buffer/memory storage." Defendants argue that the term as a consequence is ambiguous and claim 2 is invalid for indefiniteness under §112¶2. However, this misapprehends the whole point of claim construction, which is to resolve ambiguities in claim language. Indeed, construction is not required unless, when given its ordinary meaning, a term is ambiguous. Only if a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, the claim may be held indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, the claim may be sufficiently clear to avoid invalidity on indefiniteness grounds.[79]

In the context of the '414 patent, it seems clear that the term "buffer/memory storage means" was not intended to have a meaning different that the simple "storage means" of claim 1.

[79] See discussion accompanying notes 33-38.

Accordingly, this limitation should be construed to mean the same thing as "storage means" in claim 1.

Matrix Switch Means ('414 claims 5 and 7). This limitation, albeit presumptively invoking §112¶6, has a significant difference from its counterpart "switch means" in claims 1 and 2 of the '414 patent. Both clearly refer to the matrix switch 75 shown in Fig. 6A. But the claim word "matrix" implies some controllability, so that a selection may be made as to where a given input is to be directed for output. Of course, this could be accomplished by manual manipulation of mechanical switches, but the entire context of the specification (and the last limitation of each of claims 5 and 7) indicates that this control is to be achieved electronically, by a processor. An electronically controlled matrix switch appears to be a commonly understood device in the electronics field, having a reasonably generic physical structure. This is sufficient to overcome the presumption that §112¶6 applies to this limitation. **Accordingly, "matrix switch" is to be given its commonly understood meaning to those of ordinary skill in this art, which, in the context of this patent, is an electronically controllable device capable of interconnecting any given input with any given output.**

D. Method Claims – Step-Plus-Function Treatment under 35 U.S.C. §112¶6

Several of the method claims of the asserted patents contain limitations that arguably invoke §112¶6: claim 4 of '490; claims 14 and 17 of '825; and claims 14, 21, 30, and 41 of '243. In their written submissions, neither side has taken a position on whether §112¶6 should apply to these limitations. Nonetheless, the SM is obliged to examine them and recommend that they be construed in accordance with §112¶6 if that construction is warranted as a matter of law.

None of the method limitations in question uses the signal "step[s] for." Rather, each employs the term "step[s] of." Thus, "without a showing that the limitation contains nothing that

can be construed as an act," it will not be regarded as a step-plus-function limitation.[80] Moreover, in order to fall within §112¶6, the claim limitation must recite a function.[81] In determining whether a recital constitutes a supporting act for achieving a function, the emphasis will be on looking to see whether the claim language specifies *how the function is achieved* rather than simply what it is.[82]

The '490 Patent – Claim 4. Claim 4 contains two steps: "transmitting a video signal" and "transmitting an instruct-to-overlay signal." Nothing in the clause containing the first step suggests a function, nor an act for accomplishing a function. Rather, it recites merely the action of transmitting. **Accordingly, this limitation does not invoke §112¶6.**

The second step – transmitting an instruct-to-overlay signal – is more conditional in that it is required to achieve a specific functional result, namely, "to thereby cause selected ones of said computers to generate and transmit their overlay signals."[83] The bare recital of transmitting an instruct-to-overlay signal, although unquestionably the recital of an action, provides no information about how the functional goal of computer generation and transmission of overlay signals is to be achieved, and it cannot therefore be regarded as an "act" within the meaning of §112¶6. Although the signal "step for" is missing, thus raising the presumption that §112¶6 does not apply, this presumption is overcome by the fact that the step that is to produce the recited function is devoid of any supporting acts. The supporting acts are comprehended in the following portion of the specification:

> Microcomputer, 205, is preprogrammed to respond in a predetermined fashion to instruction signals embedded in the "Wall Street Week" programming

[80] See note 26 and accompanying text.
[81] See Wenger Mfg. Inc. v. Coating Mach. Sys. Inc., 239 F.3d 1225, 57 USPQ2d 1679, 1684-86 (Fed. Cir. 2001).
[82] See notes 27 and 28 and accompanying text.
[83] The treatment of the language in a "whereby" clause in Lockheed Martin Corp. v. Space Systems/Loral Inc., 249 F.3d 1314, 58 USPQ2d 1671, 1678 (Fed. Cir. 2001), is not seen to be apposite here. The language following the word "whereby" in that case was by way of describing essentially the function of the entire claimed control system. Here, the language following the word "thereby" clearly describes the functional result of the transmitting action.

> transmission. When the "Wall Street Week" transmission begins at 8:30 PM on a Friday evening, several instruction signals are identified by decoder, 203, and transferred to microcomputer, 205. These signals instruct microcomputer, 205, to generate several graphic video overlays, which microcomputer, 205, has the means to generate and transmit and TV set, 202, has the means to receive and display, and to transmit these overlays to TV set, 202, upon command. * * * [At a point in the television programming transmission], an instruction signal is generated in the television studio originating the programming and is transmitted in the programming transmission. This signal is identified by decoder, 203, and transferred via processor, 204, to microcomputer, 205. This signal instructs microcomputer, 205, to transmit the first overlay to TV set, 202, for as long as it receives the same instruction signal from processor, 204. ('490 C19L42-67)

This clause should be treated as a step-plus-function limitation under §112¶6 and construed to cover the acts described in the '490 specification that, as a result of the transmission of an instruct-to-overlay signal, cause selected ones of the computers to generate and transmit overlay signals, and known equivalent acts.

The '825 Patent – Claims 14 and 17. Again, neither party suggests step-plus-function treatment of any limitations in the '825 patent claims. The SM agrees with this implicit assessment, particularly in view of the lack of the telltale signal "step for" and the consequent presumption that §112¶6 does not apply. Claim 14 of the '825 patent recites a method having six steps, (a)-(f). With the exception of step (b), each step simply constitutes an action without a recital of functional result. Step (b) calls for "demodulating said carrier transmission to detect an information transmission thereon." Although detection of information does connote functionality, the function specified is simply that of any demodulation step, and that function can be achieved by any demodulation technique suitable to the claimed process as a whole. Dependent claim 17 adds the step of "decrypting an encrypted information transmission." Again, this bare recitation does not specify a function other than the action of decrypting, and there is no indication of how the encrypted information is to be decrypted. **Consequently, none of the steps of claims 14 and 17 of the '825 patent should be accorded §112¶6 status.**

The '243 Patent – Claims 14, 21, 30 and 41. The asserted method claims of the '243 patent recite a series of steps that, in each instance but two, simply recite an action without attendant functionality. The parties make no contentions about the applicability of §112¶6. Neither of the exceptions employs the signal "step for," and it is therefore to be presumed that §112¶6 does not apply. Nonetheless, the SM is obliged to carry the analysis further.

The first exception is found in the third step of claim 21, which calls for "controlling said processor to output specific information in response to said step of inputting said instruct-to-react signal." The recited action of "controlling said processor" has a specific recited function, namely, "to output specific information in response to" an earlier recited step. But there is no recital of a supporting act specifying how that function is to be achieved. The acts described in the specification that achieve this function are as follows:

> Receiving said message causes controller, 20, to load and execute said check-for-entered-information-and-process instructions, and executing said instructions causes controller, 20, to determine that TV567# information exists at said last-local-input-# memory and to cause an instance of particular covert control information (which is preprogrammed in said instructions) to be placed at particular control-function-invoking information memory of the controller, 39, of decoder, 145, and also at particular control-function-invoking information memory of the controller, 39, of decoder, 203. Executing said instructions also causes controller, 20, to initiate a particular signal record of meter information at the buffer, 14, of signal processor, 200, which record contains particular program unit information and TV567# information. ('243 C249L4-19)

This clause should be construed according to §112¶6 to cover the acts described in the '243 specification for accomplishing the function of outputting specific information in response to the inputting step, and equivalents known as of the issue date of the '243 patent.

Similarly, claim 30, which is dependent on claim 21, adds the step of "controlling a video recorder/player to one of record and play." Again, the recited function of this "controlling" step is to record or play, but no supporting act is recited that indicates how that function is achieved.

However, as in the case of the "demodulation" step of claim 14 of the '825 patent, the functions of recording and playing are the functions of any video recorder/player and those functions are invoked by "controlling" the device. **Accordingly, this step should not receive §112¶6 treatment.**

E. The '490 Patent

According to plaintiffs, the claims of this patent are "directed to an ultimate receiver station and the techniques used by that station to process received signals to provide overlays. While the television broadcast that is sent to each subscriber is the same, the embedded signals in the transmission allow the ultimate receiver station to generate different displays for different people." (PIB p. 37) Only claim 4 is asserted.

"Computers being adapted to generate and transmit." The parties proffer similar definitions of this term. Plaintiffs say that if it is to be construed, it means "computers that locally generate overlay video signals and transmit the overlay video signals to the television receiver." (Joint Chart p. 1) Defendants add the words "from recorded data known only to the subscriber" after the first occurrence of "signals." (Id.) Thus, defendants want the claim to be construed to mean that the overlay signals that are generated by the computer be generated from "recorded data known only to the subscriber." In support of this rather restrictive interpretation, defendants point to the "Wall Street Week" example in the patent ('490 C19L35-41), and observe that the exemplary system described there uses data concerning the subscriber's stock portfolio. They also note applicants' statement during prosecution that this "unique information is generated automatically at each subscriber station by a local computer that contains recorded data (known only to the subscriber)." (FH 000134).

There are several problems with defendants' proposal. First, it is clear that the words "known only to the subscriber" cannot be taken literally; certainly others (such as a broker, financial advisor, spouse) may be aware of the recorded data. Second, and more importantly, it is not at all clear from the context of the prosecution remarks that applicants were in any sense using the possibly private nature of the data as a distinction over the prior art. Rather, they appeared to be emphasizing the user specific nature of the data. Certainly the SM is unable to conclude that a person of ordinary skill in the art would regard those prosecution remarks as a clear disavowal of claim coverage broad enough to include generation of overlay signals from recorded data that was known to persons other than the subscriber.[84] An accused infringer cannot overcome the heavy presumption that a claim term takes on its ordinary meaning simply by pointing to the preferred embodiment.[85]

The words "computer," "generate," and "transmit," are used in their ordinary sense. The parties do not identify ambiguity or conflicting dictionary definitions. **Accordingly, this term needs no construction. However, the Court may wish to instruct the jury that the word "adapted" is a term of art used in patent claiming connoting that the recited mechanism is capable of or suitable for achieving the recited functions.**

"Overlay video signals." Plaintiffs propose a complex definition requiring that the video signals be "generated from information not included in the television program transmission" and that the television receiver "combine the computer generated video signals with the television program transmission." (Joint Chart p. 1) Again, plaintiffs point to the exemplary embodiment in

[84] See York Prods., Inc. v. Central Tractor Farm & Fam. Ctr., 99 F.3d 1568, 40 USPQ2d 1619, 1624 Cir. 1996). Prosecution history statements cited as justification for narrowing claim scope must amount to a "a clear and unambiguous disclaimer of" a broader claim scope, Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp., 309 F.3d 1365, 64 USPQ2d 1926, 1932 (Fed. Cir. 2002).
[85] Teleflex Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 63 USPQ2d 1374, 1382 (Fed. Cir. 2002).

the specification as supporting these extraneous requirements. But there is nothing in the specification that precludes the possibility that the overlay video signals be generated from information that is included in the television program transmission, or that the overlay video signals be combined with the television program by the computer. To import these examples from the specification into the claim to create limitations would violate the most fundamental rule of claim construction. As the Federal Circuit pointed out, sitting en banc in an early case:

> If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment. Nor would a basis remain for the statutory necessity that an applicant conclude his specification with "claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. It is the claims that measure the invention.[86]

The ordinary meaning of this term is a video signal that comprises an overlay. **This term needs no construction. However, the Court may feel that it would be of assistance to the jury to explain that such a signal is generated by the computer and transmitted to its associated receiver to present simultaneous display of the overlay and the television program.**

"User specific information related to said program material." Although this phraseology is clear and unambiguous, defendants contend that certain positions taken by plaintiffs during prosecution result in a narrowing of the plain meaning, so that "user specific information" must be construed to mean information that is unique to the user and not known at the television programming source. Defendants point to a statement in the prosecution history that "this system displays user specific information that is private and unique to the subscriber and is neither known to the input source nor revealed at any other subscriber station." (FH 000134) In the

[86] SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 227 USPQ 577, 585 (Fed. Cir. 1985).

opinion of the SM, this statement does not amount to a clear disavowal of the ordinary meaning of "user specific,"[87] which is information from or about a specific user. It is clear from the context of the statement that it was describing the system disclosed in the specification rather than the language of the claims. **Accordingly, this term requires no construction.**

"Unique user application" and "each display unique to a specific user." Part of the support for defendants' position (discussed above) on the meaning of "user specific information" derives from the fact that these two phrases – both employing the word "unique" – also appear in claim 4. Thus it is not unreasonable, at least on the face of things, to suggest that the word "specific" should be construed to mean "unique" when this claim is considered in its entirety. Closer analysis of the prosecution history, however, demonstrates that this suggestion is misplaced.

During prosecution of application claim 21, which became claim 4 of the patent, the applications amended the term "particular user application" to read "unique user application," and also added the phrase "each display unique to a particular user." (FH 000129-139) In the paper that effected those amendments, the applications stated that "[u]ser specific information means information which is unique to a user." (FH 000138; emphasis present) However, in a paper dated February 12, 1987, the applicants further amended the claim (together with application claims 18 and 24) to change both occurrences of "unique" to "specific." (FH 000192) They explained the reason for the amendment as follows (FH 000193-94):

> This change is not intended to affect the scope of the claims but upon review of the application, it was realized that the term "unique" may convey the thought that the invention requires that the display at each of the subscribers must necessarily be different. Although, in the example given, this is typically the case since it is

[87] Defendants also point to additional prosecution statements to the effect that user specific information means information that is unique to a user. (See, e.g., FH 000137.) But such statements are inconsistent with, and clearly subordinate to, the circumstances surrounding the appearance and ultimate disposition of the words "specific" and "unique" during the prosecution of claim 4, as will be explained below.

> highly unlikely that any two subscribers would have the same stock portfolio, it would appear to be self-evident that the invention would nevertheless apply to a situation where some number of subscribers had exactly the same portfolio. In that case, the user specific information displayed at the subscriber's television receiver would be the same for each of such subscribers. In that sense, arguably the information might not be "unique" although it would still be "specific".
>
> Applicants believe that the Examiner will have no objection to this proposed change since clearly the invention is concerned with the display of user specific information as opposed to the display of "unique" information. In that sense, the proposed amendments may actually avoid a possible inconsistency.

There is no mistaking the clear import of this language. The applicants were telling the examiner, and potential competitors, that the claim was not to be construed as limited to information, applications, or displays that were unique to a specific user, at least in the sense that "unique" connotes "different from all others."

Apparently, this was acceptable to the examiner, for he immediately allowed the claims without comment. (FH 000198-99) In processing the amendment, the examiner duly made the changes in longhand to application claims 18, 21, and 24 (FH 000142-45), but for some inexplicable reason, the changes did not appear in claim 4 of the printed patent.[88] On October 25, 2000, the applicants filed a request for a Certificate of Correction under 37 C.F.R. §1.332 to correct this administrative error.[89] In the absence of this error, defendants' claim construction position would have very little going for it. The phrases in question would read "specific user application" and "each display specific to a specific user," and ordinary meaning would prevail. The question then becomes, how to handle the error?

Very recently, this Court had occasion to consider a similar issue in ISCO Int'l Inc. v. Conductus Inc., (No. C.A. 01-487 GMS). Its Memorandum Opinion and Order, dated February

[88] The changes do appear in claims 1 and 7 of the printed patent, which correspond to the application claims 18 and 24.
[89] Apparently that request has not been acted upon by the PTO.

10, 2003[90] and reported at 2003 WL 276250 (D. Del.), the Court held that a plain typographical error in a claim should be disregarded for purposes of determining validity and infringement. In other words, the claim should be read as though the error had been corrected. Defendants assert (albeit in the context of one of the other patents in suit), that "Judge Sleet's recent *ISCO* holding is inconsistent with Federal Circuit precedent and Congress' non-retroactivity policy." The SM disagrees. The case principally relied on by defendants held that a Certificate of Correction has only prospective effect – it cannot affect litigation pending at the time it is granted.[91] This is a far cry from holding that errors in claim language that are apparent from the prosecution history and clearly the fault of the PTO cannot be taken into account during the claim construction exercise. Judge Sleet's ISCO opinion cites, at note 5, many examples of courts, including the Federal Circuit, construing claims in a fashion that accounts for and rectifies such error.[92] Indeed, the Manual of Patent Examining Procedure (MPEP) itself provides, in §1480, that "[i]f Office mistakes are of such a nature that the meaning intended is obvious from the context, the Office may decline to issue a certificate and merely place the correspondence in the patented file, where it serves to call attention to the matter in case any question as to it subsequently arises. Such is the case, even where a correction is requested by the patentee or patentee's assignee." This is the obvious explanation – and the only one supportable on this record – for the PTO's failure to act on plaintiffs' request for a certificate.

The presumption here is that the examiner did his or her job. In this instance, that job was to see whether the change from "unique" to "specific" impacted the patentability of claim 4. The presumption is that the examiner decided that it did not, and entered the amendment. It is

[90] The decision was adhered to on motion to reconsider; see Order of March 6, 2003.
[91] See Southwest Software Inc. v. Harlequin Inc., 226 F.3d 1280, 56 USPQ2d 1161, 1172-74 (Fed. Cir. 2000).
[92] See, e.g., Lemelson v. General Mills Inc., 968 F.2d 1202, 23 USPQ2d 1284, 1285 & n.3 (Fed. Cir. 1992).

certainly open to defendants to show, by clear and convincing evidence, that the examiner was wrong, and that the substitution of the word "specific" for "unique" calls into play invalidating prior art. But that possibility does not affect the construction that this claim must receive as a matter of law. **Accordingly, these terms should be construed as though they read "specific user application" and "each display specific to a specific user," and the ordinary meaning of those words controls. The ordinary meaning of the word "application" in the context of this technology is "computer program."**

"Transmitting a video signal containing a television program signal." On the face of things, it is difficult to see how anyone could quarrel about the ordinary meaning of this term. Certainly, the ordinary meaning of the term today would include both conventional analog television and digital television. However, as we have seen, the relevant time frame for the '490 patent is when it issued, in 1987.

Defendants argue that, due to the use of the term "video signal," this limitation should be construed to mean that the television program signal is a conventional analog television signal, thus excluding digital television transmissions. (DIB '490 pp. 22-25; Joint Chart p. 2) In support of this argument, they point to a technical dictionary definition dated at about the time the '490 patent issued (DIB '490, Ex. E), which they assert demonstrates that, at that time, "video" referred to conventional analog television. This, they say, raises the presumption (apparently in reliance on the Texas Digital decision[93]) that digital television is excluded. Defendants' expert witness, Prof. Schreiber, pursued this theme. He testified that if a person of ordinary skill in the art read claim 4 in 1987, without having consulted the specification, he or she would have concluded that the limitation in question was referring to conventional analog television. The

[93] See note 11 and accompanying discussion.

specification would not have altered that conclusion, for (as plaintiffs concede) it does not describe digital television. But neither does the specification employ "expressions of manifest exclusion or restriction, representing a clear disavowal of" that claim scope.[94]

Prof. Schreiber did allow that digital point-to-point television transmissions were employed in 1987 (Tr. 158), but defendants note that claim 4 speaks in terms of "communicating television program material to a multiplicity of receiver stations" (emphasis added), thus implying broadcast transmission, either over-the-air, by cable, or by satellite. Even plaintiffs' expert, Prof. Dickinson, seemed to agree that digital television broadcasts were not a practical reality as of 1987 (Tr. 62, 68-72, 127-29).[95]

Nonetheless, Prof. Schreiber's own textbook (P-11),[96] published in 1986, casts substantial doubt upon the reliability of his conclusion that a person of ordinary skill would not, at the time the '490 patent issued, have regarded the words "video signal containing a television program signal" as comprehending digital as well as conventional analog television. Figure 1.2, appearing at page 12 of his book, purports to show a simple television system. It illustrates, as viable alternatives, a 4 megahertz analog channel and a 24 megabyte per second digital channel. This seems clearly to indicate that persons skilled in the art, and even their students, were then thinking in terms of analog and digital transmission techniques as viable alternatives for television.

Thus, the only potentially viable basis for construing this limitation to exclude digital television is the opinion of the Federal Circuit in Wang Labs. Inc. v. America Online Inc., 197

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[94] See Teleflex Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 63 USPQ2d 1374, 1381 (Fed. Cir. 2002).
[95] The problem was apparently due to the regulatory allotment of a 6 megahertz bandwidth for a television channel. Propagating a video signal at a satisfactory bitrate in such a narrow bandwidth was not then practicable, and required further improvements in signal processing techniques, modems and other hardware, etc. (Tr. 55-59)
[96] WILLIAM F. SCHREIBER, FUNDAMENTALS OF ELECTRONIC IMAGING SYSTEMS (Springer-Verlag 1986).

F.3d 1377, 53 USPQ2d 1161 (Fed. Cir. 1999). The SM has puzzled privately and publicly[97] over the meaning of that decision and is no closer now to a satisfactory explanatory rationale than he was when the case came down over three years ago. The invention there had to do with apparatus for retrieving and processing frames of information from a central videotex supplier. At the time of the invention, several protocols existed for processing and displaying computer-generated data. They were of two general types: character-based protocols and bit-mapped protocols. The patent specification disclosed only character-based protocols. The district court construed the claim term "frame" to mean a page of information encoded in a character-based protocol. Inasmuch as the accused infringing systems, like most Internet systems, utilized bit-mapped protocols, they were held not to infringe.

The Federal Circuit affirmed, concluding that the district court had correctly construed the term "frame" as limited to character-based protocols. In so doing, it systematically rejected several serious and reasonable arguments by the patentee without providing much insight as to the underlying rationale for its decision. For example, in response to the patentee's argument that the character-based protocol was simply a preferred embodiment, and that the embodiment described in the specification does not set the boundaries of the claims, the appellate court offered a rather cryptic statement:

> Although precedent offers assorted quotations in support of differing conclusions concerning the scope of the specification, these cases must be viewed in the factual context in which they arose. Whether an invention is fairly claimed more broadly than the "preferred embodiment" in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art, for claims should be construed, when feasible, to sustain their validity. The usage "preferred" does not of itself broaden the claims beyond their support in the specification. * * * The only embodiment described in the '669 patent

[97] See Robert L. Harmon, "Must a Patent Describe an Accused Infringement?," J. Pat. & Tr. Off. Soc'y, Vol. 85, No. 2, pp. 153-171 (Feb. 2003).

> specification is the character-based protocol, and the claims were correctly interpreted as limited thereto. 53 USPQ2d at 1165.

How this can be squared with the court's en banc pronouncement in SRI v. Matsushita,[98] is far from clear.

The appellate court also brushed aside the patentee's argument that it was irrelevant to the construction of the claims whether the specification contained an enabling description of any bit-mapped decoder, saying:

> the claims are not properly construed to have a meaning or scope that would lead to their invalidity for failure to satisfy the requirements of patentability. * * * Although Wang is correct that a claim is not invalid simply because it embraces subject matter that is not specifically illustrated, in order to be covered by the claims that subject matter must be sufficiently described as the applicant's invention to meet the requirements of section 112. This requirement was not met as to protocols other than character-based. Id.

Again, the SM has struggled to understand the full import of this statement. Its reasoning appears circular, especially when one considers the court's more recent statement that the "question of enablement does not turn on whether the accused product is enabled. Rather, '[t]o be enabling, the specification of the patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.'"[99]

Attempting to apply the Wang v. AOL reasoning to the present circumstances is not a simple matter, largely because it is something of a chicken-and-egg proposition. We are told by defendants that claims must be construed to preserve their validity and that, consequently, we must construe the limitation in question here to exclude digital television because that technique

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[98] "If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment. Nor would a basis remain for the statutory necessity that an applicant conclude his specification with 'claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.'" SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 227 USPQ 577, 585 (Fed. Cir. 1985).

[99] Durel Corp. v. Osram Sylvania Inc., 256 F.3d 1298, 59 USPQ 1238, 1244 (Fed. Cir. 2001).

is not enabled. If nonenablement is the crucial factor in Wang v. AOL, then this argument has some force, for it is likely that digital television is not enabled in the '490 specification. But that question has to be decided; the SM cannot simply assume that enablement is lacking. And such an inquiry is beyond the scope of these proceedings.

What if adequacy of the written description is the crucial factor in Wang v. AOL? If a person of ordinary skill would understand from the specification that the employment of digital television signals was "sufficiently described as the applicant's invention" in the context of the claims at issue, it would be wrong to construe the claims so as to exclude it. Yet the adequacy of the written description is, like the scope of enablement, something that is beyond the charter of the SM in this proceeding.

When the Federal Circuit itself finds it necessary or desirable to distinguish Wang v. AOL, it appears to struggle. Thus, in one recent case, it offered this rationale: "Although we noted that the only system described and enabled in the specification used a character-based protocol, we also noted that the intrinsic evidence did not describe bit-mapped protocols as included in the invention, and a person skilled in the art would not have understood bit-mapped protocols to be included."[100] With all respect, this circular explanation is not very helpful. The court seems to do better when it offers to distinguish Wang v. AOL on the basis of statements in the prosecution history. As it said a few weeks ago:

> The court [in Wang v. AOL] noted that the "only system that is described and enabled" in the patent specification "uses a character-based protocol," and that the specification's references to bit-mapped protocols did "not describe them as included in the applicant's invention, and that the specification would not be so understood by a person skilled in the field of the invention." Id. at 1382, 53 USPQ2d at 1164. Importantly for our analysis, the inventors disclaimed the broader construction in a statement during prosecution. Id. at 1383-84, 53 USPQ2d at 1165-66. Again this case is distinguishable, as the claims of the '593

[100] Teleflex Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 63 USPQ2d 1374, 1382 (Fed. Cir. 2002)

> patent were neither amended, nor was a broader construction disclaimed by argument during prosecution.[101]

This sounds reasonable until one carefully analyzes the prosecution statement in Wang v. AOL. As the court itself described it, 53 USPQ at 1165-66:

> The prosecution history also supports the limitation to character-based frames. In an Information Disclosure Statement filed by Wang during the prosecution of the parent application, Wang distinguished a reference (Fleming) describing the NAPLPS system by stating that the reference "encodes pictorial information . . . on the pel [picture element] level, rather than on the character level." Wang argues that this statement was in the parent application and does not apply to the continuation-in-part that is the '669 patent. However, this subject matter is common to the continuation-in-part application, and argument concerning the Fleming reference was correctly viewed as applying to the common subject matter. * * * This history reinforces the conclusions that the inventors focused their invention, and the description and claims directed to that invention, on a character-based system, and that a person of skill in this field reading this history would so understand the explanation of the Fleming reference.

It is hard to see how this rather innocuous statement, made in an Information Disclosure Statement – rather than in an argument or in support of an amendment seeking to overcome an actual rejection by the examiner – can be equated with a "conspicuous and unambiguous"[102] concession that the claims excluded bit-mapped protocols. Thus, the fact that applicants did not make such arguments during the prosecution of the '490 patent does not, in the view of the SM, necessarily take the patent out of the shadow cast by Wang v. AOL.

Another serious difficulty lies in deciding when Wang v. AOL applies and when it does not. If the case were to be read expansively, it could cover almost any situation where the language of a claim is broad enough to read on embodiments that are not supported and enabled by the specification. But such a reading would be wholly inconsistent with earlier cases like SRI v. Matsushita, which insists that an applicant may claim more broadly than the embodiment

[101] Alteris Inc. v. Symantec Corp., Appeal Nos. 02-1137, -1138, (Fed. Cir. 02/12/03).
[102] See Modine Mfg. Co. v. United States ITC, 75 F.3d 1545, 37 USPQ2d 1609, 1613 (Fed. Cir. 1996).

described in the specification,[103] and Teleflex v. Ficosa, that the number of embodiments disclosed in the specification is not determinative of the meaning of disputed claim terms.[104] In view of this, it is reasonable to conclude that Wang v. AOL is triggered only in certain special circumstances, as where the construction dichotomy – e.g., bit-mapped versus character-based – appears to be central to the claimed invention. In the present case, there is no denying that such a circumstance prevails. These patents are about television program transmissions, and it is essential for a competitor to know whether they cover digital television in addition to standard analog television.

Of course, this entire conundrum can be resolved by concluding that Wang v. AOL and similar cases[105] represent an anomaly in Federal Circuit jurisprudence concerning claim construction. The SM is reluctant to do that. **Accordingly, it is suggested that the Court consider whether digital television is enabled and described as the applicants' invention within the meaning of §112¶1 before construing this limitation in light of Wang v. AOL. This could be done in association with dispositive motions (if such are permitted and filed) or at the jury instruction phase. Alternatively, should the Court conclude that Wang v. AOL is inapplicable here, it is recommended that the jury be instructed that this limitation should not be construed to exclude digital television.**

"Transmitting an instruct-to-overlay signal." The ordinary meaning of these words is to transmit a signal; the signal is termed an "instruct-to-overlay" signal which in the context of the remainder of claim 4 simply means a signal that causes a computer to generate and transmit an overlay signal to an associated receiver. Defendants would limit the meaning to a specific

[103] See note 86.
[104] See note 85.
[105] See, e.g., Toro Co. v. White Consol. Indus. Inc., 199 F.3d 1295, 53 USPQ2d 1065 (Fed. Cir. 1999).

instrumentality that does the "transmitting" (i.e. the transmitter of a television signal),[106] and apparently to a process in which all overlay transmissions are simultaneous. (Joint Chart p. 2)

The first of these restrictions is simply an effort to important a limitation from the specification into the claim. Although the specification shows an example in which the television transmitter also transmits the instruct-to-overlay signal, nowhere in the specification is there an indication that the applicants intended to limit the claim to that example.[107] The claim is clearly written broadly enough to cover transmission of instruct-to-overlay signals from other sources, so long as they are not located at the receiver station.

The second restriction is not suggested in the excerpt from the prosecution history that defendants cite. (FH 000133-34) Although the patent disclosure may have contemplated virtually simultaneous transmission of overlay video signals in response to a single instruct-to-overlay signal transmitted by the television transmitter to all receiver stations, clearly this might not be the case if the instruct-to-overlay signal were generated by a source other than the transmitter of the television program material.

There is no legal warrant for limiting the clear import of this language in the manner suggested by defendants. **This limitation should be construed to mean transmission of a signal, from a source at a location other than the receiver station, that instructs a computer to generate and transmit an overlay signal to an associated receiver.**

"Related computer generated overlay." The parties differ over *what* the computer generated overlay is related *to*. Plaintiffs say it is the programming transmitted; defendants say it

[106] Indeed, defendants provide further interpretation of their proffered interpretation: "This means that the television program and instruct to overlay signal are transmitted from the same television transmitter, which is at [a] location different from the location of the receiver station." (Joint Chart p. 2)
[107] In Teleflex Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 63 USPQ2d 1374, 1381-83 (Fed. Cir. 2002), the court rejected the argument that where only one embodiment is disclosed in the specification, claim terms are limited to the embodiment disclosed.

is the programming *being* transmitted, thus implying almost a real-time relationship. (Joint Chart p. 2) In the context of the claim taken as a whole, defendants' version does not make much sense. The claim language is "to present a combined display consisting of the television program and the related computer generated overlay." To adopt defendants' proposed definition would mean that the overlay would have to vanish the instant the particular portion of the television program being broadcast became unrelated. This might well happen if the instruct-to-overlay signal were transmitted at the appropriate time by the source of the television transmission. But if the instruct-to-overlay signal were to be transmitted locally, a strict relationship between program content and overlay would be difficult, if not impossible, to maintain. **This limitation should be construed to mean that the overlay must be related to the television program in general rather than the specific portion of the program being transmitted at a given moment.**

F. The '825 Patent

Only claim 17 of the '825 patent is asserted; however, inasmuch as it depends upon parent claim 14, the limitations of claim 14 must also be construed. The disparity in position of the parties with regard to the limitations of these claims illustrates one of the very unfortunate aspects of most Markman proceedings. More often than not, the process tends to degenerate into the very exercise in redundancy that the Federal Circuit has warned against. The parties construct complex competing definitions, without real support in the intrinsic record, hoping thereby to bolster their ultimate positions on infringement and validity. It is sometimes difficult for the ultimate construer of claims – the court – to avoid the temptation of simply choosing the most plausible of these complexities, just to get the job over with and done. The SM has attempted to resist that temptation.

The parties' proffered constructions of the words of the asserted claim of the '825 patent create more problems than they solve. In particular, their suggested meanings and definitions introduce new ambiguities by adding words that themselves require construction and have no clear meaning in the context of the claim read as a whole.

"Information transmission." This term appears three times in claim 17 (by dependency on claim 14). It must of course be accorded the same definition for each use absent unusual circumstances, which are not present here. Defendants argue that these words mean

> any transmission with information content including audio, video, television, radio, computer, data, control, or any other type of transmitted information whether transmitted by wire, radio frequency, optical, physical media or any other mode of transmission. (Joint Chart pp. 3-4)

It is not immediately apparent whether this convoluted definition is meant to be restrictive or expansive. What is immediately apparent, however, is that there is no warrant in the intrinsic patent record for engrafting such definitional baggage onto the simple words "information transmission."

The ordinary meaning of this term, in its broadest sense, is a transmission that contains information. This could include such wildly disparate forms of communication as a television signal and a handwritten letter. However, inasmuch as the claim also requires that the information transmission be on a "carrier transmission," and be obtainable by demodulating the carrier transmission, it would be inappropriate to accord that broad a meaning. **Accordingly, it is clear that the term must be limited to transmission of information that is modulated upon a transmitted electromagnetic waveform, and that construction is recommended.**

It should be noted that the term "information transmission" can, in light of the specification ('825 C8), be understood to refer to the programming transmission. Accordingly, the same set of problems encountered with respect to the limitation "video signal containing a

television programming signal" in connection with claim 4 of the '490 patent is presented here. The situation differs significantly in two respects, however. The '825 patent issued in 1990 rather than 1987, and its specification is vastly expanded over that of the '490 patent. These circumstances make it all the more likely that a person of ordinary skill in the art would not read "information transmission" to exclude digital television. Nonetheless, these differences do not dispose of the potential Wang v. AOL problem. **Accordingly, it is recommended that the Wang v. AOL issue be handled in the same way for this limitation as for the '490 limitation.**

"Embedded signals on said information transmission." The term "embedded signals" is used several times in the claim. Plaintiffs seek a definition of "embedded" that is in some ways broad and in some ways narrow: "a digital signal transmitted in combination with the programming signal that can be separated from the programming signal." (Joint Chart p. 3) With all respect, this suggested definition is very confusing. Nothing in the claim suggests that the embedded signal be limited to a digital format. The claim does not use the term "programming signal." Most importantly, there is nothing in the intrinsic record to suggest that "embedded on" was intended to be synonymous with "in combination with."

> For their part, defendants want the words "embedded signals" to mean
>
> Signals enclosed within or made an integral part of the information transmission. The embedded signals cannot be separated inadvertently from the programming and must occur at precise times in the programming to synchronize the operation of the receiver station apparatus. (Joint Chart p. 3)

This definition too is confusing and unwarranted. The suggested words "enclosed within or made an integral part of" would themselves require construction, being alternatives without an immediately apparent rationale.

Nonetheless, it is clear that the term "embedded" has, in the context of an electromagnetic transmission, a technical meaning that may not accord with ordinary dictionary definitions. The question becomes what the phrase "embedded signals on said information transmission" really conveys to one of ordinary skill in the art, viewing this claim as a whole in the latter part of 1990 when it issued. Fortunately, a passage in the '825 patent goes a long way toward answering this question, because it tells us what the applicants meant to convey:

> The present invention employs signals embedded in programming. Embedded signals provide several advantages. They cannot become separated inadvertently from the programming and, thereby, inhibit automatic processing. They occur at precise times in programming and can synchronize the operation of receiver station apparatus to the timing of programming transmissions. They can be conveniently monitored.
>
> In the present invention, the embedded signals contain digital information that may include addresses of specific receiver apparatus controlled by the signals and instructions that identify particular functions the signals cause addressed apparatus to perform. ('825 C8)

It seems clear that a person of ordinary skill in the art, reading the term "embedded signals" in light of this description, would conclude that it means **signals that contain digital information (but are not limited to digital information) and that are associated with the information transmission in a such a way that (1) they cannot be inadvertently separated from that transmission and (2) occur at precise times in that transmission. That construction is recommended.**

"Decrypting an encrypted information transmission." Here it is the plaintiffs who are seeking to impose an extremely narrow construction of this straightforward terminology. Plaintiffs say that it means

> to convert the information transmission into usable information in the clear by proper application of the key, which may include conventional descramblers if they are actuated by receiving digital key information. (Joint Chart p. 6)

This definition would create ambiguity not relieve it. Further construction would be required to know what is meant by "usable" and "in the clear" and "proper application of the key" and "conventional descramblers" and "digital key information." Defendants' proposal ("transforming an unintelligible information transmission into an intelligible form, such as through unscrambling, to provide the information transmission in an intelligible form"; Joint Chart p. 6), aside from its tautology, is not nearly as complex, although it does require further construction with respect to "intelligible" (intelligible to whom? or to what?) and "unscrambling."

Again, the ordinary meaning of the words prevails, as it must where the specification gives no clear indication that something else was intended. The ordinary meaning of the word "decrypt" is "decode" or "decipher" and the ordinary meaning of the term in question is "decoding an encoded information transmission." **This term needs no construction.**

G. The '414 Patent

Most of the contested limitations of the asserted claims 1, 2, 5, and 7 of this patent have already been construed in the context of §112¶6. However, there are some additional issues that must be addressed.

"A plurality of detector means" (claims 1 and 2) and "a control signal detector means" (claims 5 and 7). Claims 1 and 2 refer to "a plurality of detector means" twice; likewise for claims 5 and 7 and "a control signal detector means." The first reference is in the context of a target destination to which the programming is sent from the receiver/distribution means, and the second reference defines the detector means in terms of its function (detecting control signals). Defendants argue that all of the claims are fatally indefinite and therefore invalid under §112¶2 because a person of ordinary skill in the art would not be able to tell whether the claim is referring to a single set of detector means or two sets.

Defendants' position is somewhat convoluted, but it seems to boil down to the proposition that if the applicants had wished to limit the claim to one set of detector means, they would have used the article "said" as a modifier the second time the term was employed; on the other hand, if the claims are interpreted to require two sets of detector means, they don't make any sense for, to use defendants' words, the second set would be "drifting in space * * * a disembodied aggregation of components." (DIB '414 pp. 5-8) Despite such nice imagery, the SM believes that defendants' position is clearly mistaken.

Based upon forty years of professional experience in reading, writing, and analyzing patent claims, the SM feels justified in taking notice that patent practitioners often use the definite article "said" (or even plain old "the") to modify the second occurrence of an antecedent element that was prefaced with the indefinite article "a" or "an." But this practice is in no way mandatory; it is merely typical. The question is always whether the claim makes grammatical sense as it is written.

Were it not for this typical practice, not followed in the claims of the '414 patent, it would be difficult to understand how defendants would have any argument at all. Surely the claims are crystal clear from a grammatical standpoint. First the claim refers to the detector means as a target to which programming is input, and then it identifies the function of the detector means. It is perfectly plain to any reader not steeped in patent law that only a single set of detector means is required. Does the failure to follow the typical practice here render the claims indefinite? Certainly defendants cite no legal authority for that remarkable proposition. And certainly they have not come forward with evidence that clearly and convincingly establishes that a person of ordinary skill in the art would not understand that the claims refer to a single set of detector means, which is the only logical reading of the claim language.

These limitations should be construed to mean that the claims require only a single set of detector means (claims 1 and 2) or control signal detector means (claims 5 and 7).

"Identifying." Somewhat surprisingly, the parties assert that this word needs construction. It is used in claims 1 and 2 in this context: "processor means * * * for identifying each detected control signal as having been detected by a particular detector means." Plaintiffs say it should be construed to mean "to ascertain or establish what a given thing is." (Joint Chart p. 9) Defendants say it means "making one thing correlative with another – that is, establishing a correlation between two things." (Joint Chart p. 8) There is no warrant in the intrinsic patent record for imposing those restrictive definitions here. Undoubtedly the word can mean both of the things the parties attribute to it, and have other meanings as well. Nothing has been advanced by either party that would justify selecting a particular one from among those various meanings. "Identifying" is a broad term and should be read in a corresponding broad way. As is usually the case in this report, the SM declines the invitation to elaborate on an otherwise clear term in a way that might confuse rather than illuminate. **This term needs no construction.**

"Control signals respecting said programming." Equally surprisingly, the parties hotly contest the meaning of this simple language. Plaintiffs say that the term "control signal" means "any signal that purposely affects the recording, processing, transmission, or interpretation of data by a system element." (PIB p. 88)[108] Defendants attempt to place their definition a little more in context, asserting that control signals "are detectable physical quantities or impulses (as a voltage, current or magnetic field strength) by which digital information is transmitted in programming, to permit stations that originate programming to control the handling, generating, and display of programming at receiver stations." (Joint Chart p. 27)

[108] Plaintiffs did not include this proposed definition in the portion of the Joint Chart dealing with the '414 patent. They did, however, proffer it in connection with the '277 patent. (Joint Chart p. 59)

These proposed definitions are worse than useless, for they introduce the distinct probability of confusion. They convert few words into many. They carry the seeds of possible inadvertent narrowing of the claims, and for no reason. Claims 1 and 2 of the '414 patent say nothing about the purpose or use of the control signals, and require only that they be detected, identified as having been detected, and stored. Claims 5 and 7 add the requirement that a portion of the control signals be transferred for further processing. The control signals, according to the plain language of the claims ("control signals respecting said programming"), need only be related somehow to the programming. Nothing further is required of them in the context of these claims, and no further definition is required to enable a person of ordinary skill in the art to understand what the claims mean. **This limitation needs no construction.**

"Location." This word is used in claim 5 in this context: "configured to detect said control signals at a pre-determined location within said programming." Later in this report, the meaning of the term "location" is discussed in the context of claim 7 of the '277 patent. The parties appear to be in agreement, with which the SM concurs, that the term should receive the same construction in both patents. (See PIB p. 88; DIB '414 p. 20 n.9) **Accordingly, "location" should be construed to have the same meaning as in claim 7 of the '277 patent.**

H. The '654 Patent

The asserted claims are 10 and 70. Claim 70 is dependent upon claim 66, which is in turn dependent upon claim 63, so the limitations of those claims must be analyzed as well. The only limitations that require construction have already been addressed in the context of §112¶6.

I. The '277 Patent

As explained previously, this patent has been before the Federal Circuit on an appeal from the U.S. International Trade Commission. See Personalized Media Comm. LLC v. United

States ITC, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998). To reiterate, although this decision may not have strict preclusive effect under traditional principles of res judicata and collateral estoppel, its effect as precedent is inescapable. **Accordingly, it is recommended that the construction given any pertinent claim limitations by the Federal Circuit be adopted here.**

"Television program transmission." The parties are not far apart in their views on this limitation. It would seem, at first look, that everyone knows what a television program transmission is. However, in Personalized Media, 48 USPQ2d at 1890, the Federal Circuit noted that "the specification uses this phrase to denote a single transmission enveloped within a single carrier wave. The specification does not suggest that a 'television program transmission' can be a multi-channel transmission * * * ." Although it is not clear that the Federal Circuit was adopting this as a claim construction, it does reflect the court's view of what those words were intended to convey in the context of the intrinsic patent record. The SM notes that a television program transmission is a composite video signal that usually has three components – monochrome information, color information, and audio information – each with its own carrier frequency, that together comprise the television "channel." (Schreiber Dec. ¶9) Thus, as defendants suggest, a more workable version of the Federal Circuit's definition would be a single-channel transmission. **Accordingly, it is recommended that "television program transmission" be construed to mean a single channel television transmission.**[109]

"Separately defined from standard analog video and audio television." The parties leave no doubt about their divide on this limitation. Defendants say it can "include analog video and audio television transmissions with digital data embedded therein." (Joint Chart pp. 44-45)

[109] The Court may also wish to instruct the jury that "channel" is not used in its secular sense, and is intended to encompass not only traditional broadcast TV channels, but modern orbital satellite channels that can, with digital compression techniques, accommodate multiple simultaneous video programming services. (See PRB p.45 & n.45 & Ex. C.)

Plaintiffs say it has to be "other than standard analog video and audio television." (Id.) The question then becomes, of course, what is standard analog video and audio television? Even a satisfactory answer to that does not end the matter, however, for one must determine the meaning of "separately defined from."

The parties appear to be in general agreement that, although "standard analog video and audio television" may have different meanings in different parts of the world (according to regulatory standards), the phrase does not include digital television. The term "separately defined from" can certainly mean, in its ordinary sense, "different from" or "other than." The specification uses the term once ('277 C21L62) in a way consistent with the ordinary meaning; thus, the "separately defined transmission" is routed to "a signal decoder that detects and processes signal information embedded in a frequency other than a television or radio frequency." ('277 C22L21-23) Moreover, the ordinary meaning appears to be consistent with other claims in the patent, such as claim 8, which speaks of a receiver system configured to receive both "an analog television transmission" and a "television program transmission that is separately defined from standard analog television." **Accordingly, it is recommended that this limitation be construed to mean a television program transmission that is not a standard analog video and audio television transmission.**

Defendants also request a construction of this limitation that would exclude "non-line based MPEG compressed digital television transmissions." (Joint Chart p. 45) This position is similar to their stand on the "video signal" limitation of claim 4 of the '490 patent, and the "information transmission" limitation of claim 17 of the '825 patent. There is no basis in any of the intrinsic patent documents for excluding digital television transmissions that are in "non-line based, MPEG-2 compressed" format. Indeed, those words themselves would need further

translation. But there is, in the case of the '490 and '825 patents, a question of whether the limitation can be construed broadly enough to comprehend digital television transmission of any kind. In this instance, the answer is much easier to come by. When one reads the claim as a whole, it is seen that the claimed system is for locating or identifying a specific signal. That specific signal is "in a television program transmission" and the television program transmission in question is said to be "separately defined from standard analog video and audio television." Inasmuch, as indicated above, the television program transmission in question is *not* a standard analog video and audio television transmission, it must necessarily include digital television transmissions. Thus, leaving for another day any questions of support or enablement, **it is recommended that this limitation be construed to include digital television transmissions.**

"Digital detector." As already indicated, the Federal Circuit in Personalized Media construed this limitation. It held that the term meant "a device that acts to detect the digital signal information in another stream of information." 48 USPQ2d at 1888. The parties are close to agreement that the Federal Circuit was right, but plaintiffs apparently want to substitute "a" for "another." (Joint Chart p. 45) The SM has trouble discerning what difference this would make. The use of "another" would not appear to introduce any ambiguity; the original stream of information containing the digital signal information is "another" to the stream of digital signal information. **Accordingly, "digital detector" should be construed to mean a device that acts to detect the digital signal information in another stream of information.**

"Detecting said specific signal at a specific location or time." Both sides appear to argue that the definition of "location" adopted by the Federal Circuit in Personalized Media Comm. LLC v. United States ITC, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998) should prevail here. The problem comes in determining what that definition is. There the court clearly approved the

conclusion of the administrative law judge, found at page 88 of his Initial Determination and Recommendations, that "location, as the word is used in claim 6 [and 7] would include a line, or lines, or portion of a line in the vertical interval of a television video transmission, or a frequency within the audio range of a television transmission." The court specifically said:

> The ALJ correctly construed the term "location" in accordance with the examples provided in the specification, viz., a line, or lines, or portion of a line in the vertical interval of a television video transmission, or a frequency within the audio range of a television transmission, see '277 patent, col. 9, l. 61 to col. 10, l. 16, examples which involve only single channel transmissions. 48 USPQ2d at 490.

This seems plain enough. But the trouble is that the ALJ used the phrase "would include," which is imprecise in that it does not appear to exclude other possibilities. The cited text in the specification does not appear to describe other examples, but it does not appear to exclude them either. And none of this was of particular concern for the Federal Circuit, for its focus was on the question of whether the "ALJ erred in construing the term 'location' to preclude selection of a control signal based on selection of a particular carrier wave in a multi-carrier transmission." 48 USPQ2d at 489. It held that the ALJ's construction in that respect was correct.

Thus, the SM is unable to read the Federal Circuit decision as approving a construction of the word "location" that would preclude locations other than the recited "line, or lines, or portion of a line * * * or a frequency * * * ," so long as it is understood that alternative locations would have to be part of a single-channel transmission. **Accordingly, "location" should be construed to be a specific line or lines, or portion of a line in the vertical interval of a single-channel television video transmission, or a frequency within the audio range of a single-channel television transmission, or other location within a single-channel transmission.**

Defendants proffer a further construction that would require the specific signal to be at a predetermined or preinformed location or time. (Joint Chart p. 45) They quote a portion of the

specification ('217 C9L37-47) that, in describing one of the purposes of the invention, refers to "techniques whereby the pattern of the composition, timing, and location of embedded signals may vary in such fashions that only receiving apparatus that are preinformed regarding the patterns that obtain at any given time will be able to process the signals correctly." While this language may contemplate an embodiment of the claimed invention, it in no way suggests that the invention is to be so limited. Again, defendants' position is nothing more than an invitation to import a limitation from the specification into the claim. **Accordingly, this limitation should be construed in accordance with its ordinary meaning, except for the term "location" as discussed above.**

Both sides appear to agree that the same definition of the word "detecting" should be adopted in all the patents in suit (see PIB p. 22; Joint Chart pp 25, 39, 46) and the SM concurs. **Accordingly, "detecting" should be construed to have the same meaning as in the claims of the '414 and '654 patents: "extracting intelligence from a signal."**

"Instructions to cause said processor to cause said detector to detect different signals." Defendants argue that this limitation, appearing in claim 12 of the '277 patent, is indefinite. They ask (DIB '277 p. 22): "what are the newly detected signals different **from** (or different **than**) and in what sense are they different? Plaintiffs have a simple answer: the "different signals" are signals that would not have been detected absent the instructions. (Joint Chart p. 47) Certainly, this limitation is not insolubly ambiguous if one adopts plaintiffs' very reasonable construction. **Accordingly, "different signals" in this context means signals that would not have been detected without instructions to the processor.**

"Processing the received detected signals to identify how and where to pass said information." Plaintiffs suggest that this term needs no construction, and the SM concurs. The

terms "processor" and "detecting" have already been discussed and construed. In light of those constructions, the terms "processing" and "detected" need no further elaboration. **This limitation needs no construction.**

"Plurality of apparatus." In patent law parlance as elsewhere, "plurality" refers to two or more items, absent some indication to the contrary.[110] **The parties agree, and the SM concurs, that this limitation should be construed to mean "multiple devices, each of which might be addressed or controlled by detected digital signals."** (Joint Chart p. 49)

"Addressed." The full limitation is "transferring said detected signals to said apparatus that are addressed by said signals or to be controlled by said signals." Both sides assert that the word "addressed" should get its ordinary meaning, but they seem to disagree about what that is. Plaintiffs say it means "directed to," while defendants argue that it means "directed to or intended to be received by." (Joint Chart p. 49) With all respect, the SM has great difficulty following defendants' line of logic here. In particular, it is difficult to see how the concept of "being directed to" does not include the concept of "intended to be received by." The parties also disagree, quite remarkably, on what is being addressed, even though the claim makes it clear that it is "apparatus." Plaintiff seeks to make it "particular apparatus." Again, this jousting illustrates the futility of restating every claim term in the hopes of one side or the other gaining a real or imagined advantage from a stray word or two. The SM, though not a person skilled in the technology at hand, has no trouble in understanding the ordinary meaning of the limitation. Transferring a detected signal to the apparatus it is addressed to is self-explanatory, like delivering a letter to the house it is addressed to. But adding the parties' proposed embellishments makes the limitation less understandable, not more. If we adopt defendants'

[110] Dayco Prods. Inc. v. Total Containment Inc., 258 F.3d 1317, 59 USPQ2d 1489, 1497 (Fed. Cir. 2001).

approach, we then must ask how "directed to" differs from "intended to be received by." If we adopt plaintiffs' approach, we then must ask how "apparatus" differs from "particular apparatus." Patent cases are hard enough for juries as it is, and there is nothing to be gained by making them harder, through the creation of extraneous and irrelevant word puzzles. **This limitation needs no construction.**

"Controller operatively connected to said decryptor for causing said decryptor to alter its decryption pattern or technique." The term "decryptor" is introduced in claim 17 of the '277 patent. As indicated in connection with the '825 patent, the ordinary meaning of "decrypt" is "decode" or "decipher" and the ordinary meaning of a decryptor is thus a device that decodes or deciphers, in the context of this claim, detected signals that have been encrypted. However, the remainder of the limitation invites some considerations in addition to those discussed in connection with the '825 patent.

Defendants propose a fairly elaborate definition of "decryption pattern" as "the predetermined pattern of the composition, timing and location of the embedded signal whereby the pattern is used to accomplish decryption of the embedded signal." (Joint Chart p. 51) Plaintiffs, on their side, say that the term is clear as is, but if it is to be construed, it "could include a decryption key." (Id.) Plaintiffs are right; "decryption pattern" *could* include a decryption key. But it need not, according to the plain language of the claim.

Similarly, defendants propose that "decryption technique" be interpreted to mean "an overall method used to accomplish decryption," while plaintiffs say that, although it needs no construction, it "could include a decryption algorithm." (Joint Chart p. 51) Right again. The technique *could* include an algorithm but it need not, according to the plain language of the claim.

Nonetheless, the disjunctive use of the words "pattern" and "technique" creates an ambiguity, for it is not immediately apparent whether there is a difference between the two terms and, if there is, what the difference may be. Accordingly, it is necessary to turn to the specification to determine whether the ambiguity is resolved there.

It is clear that the purpose of encryption in the context of this technology is to prevent unauthorized users from attaining access to the information content of the transmissions. As the patent explains it, "[f]lexibility must exist for varying techniques that restrict programming to duly authorized subscribers in order to identify and deter pirates of programming." ('277 C11L24-27) The specification goes on to tell us that

> In the prior art, various means and methods exist for regulating the reception and use of electronically transmitted programming. Various scrambling means are well known in the art for scrambling, usually the video portion of analogue television transmissions in such a fashion that only subscriber stations with appropriate descrambling means have capacity to tune suitably to the television transmissions and display the transmitted television image information. Encryption/decryption means and methods, well known in the art, can regulate the reception and use of, for example, digital video and audio television transmissions, digital audio radio and phonograph transmissions, digital broadcast print transmission, and digital data communications. Other techniques, well known in the art, involve controlling interrupt means that may be as simple as on/off switches to interrupt or disconnect programming transmissions at stations that lack authorizing information or are determined in other fashions not to be duly authorized. Still other techniques, also well known in the art, involve controlling jamming means that spoil transmitted programming at stations that lack authorizing information or are determined not to be duly authorized, thereby degrading the usefulness of said programming. Such other techniques include, for example, inserting so-called "noise" into the transmitted programming which noise may be, for example, overlays of one or more separate transmissions. ('277 C156L61-C157L20)

Among the purposes of the invention is to " provide a variety of means and methods for restricting the use of transmitted communications to only duly authorized subscribers. Such means and methods include techniques for encrypting programming and/or instructions and decrypting them at subscriber stations. They also include techniques whereby the pattern of the

composition, timing, and location of embedded signals may vary in such fashions that only receiving apparatus that are preinformed regarding the patterns that obtain at any given time will be able to process the signals correctly." ('277 C9L37-47) This sounds like the inventors are attempting to distinguish encrypting techniques from techniques that vary the pattern of the composition, timing, and location of embedded signals. Finally, when the specification gets down to talking about the specific embodiment, it has this to say:

> The means and methods of the present invention for regulating reception and use of programming relate, in particular, to three features of the present invention. The computer system of the present invention has capacity at each subscriber station to compute station specific information based on preprogrammed information that exists at each station and that differs from station to station. Given this capacity, any central control station of the present invention that originates a SPAM transmission can cause subscriber station apparatus to decrypt received SPAM information in different fashions with each station decrypting its received information is its own station specific fashion. A central station can cause different stations to compute different station specific decryption cipher keys and/or algorithms to use in any given step of decryption or to compute station specific key and/or algorithm identification information that differs from station to station and controls each station in identifying the key and/or algorithm to use for any given step of decrypting. A second feature of the present invention is that effective SPAM processing depends on the correspondence between the transmitted SPAM information that causes processing at the subscriber stations and the information preprogrammed at the various stations that controls the SPAM processing at each station. * * * The third feature of the present invention is an extended system of means and methods for regulating the reception and use of SPAM information – including decryption key and algorithm information – that is illustrated in FIG. 4 and discussed more fully below.
>
> By themselves, the first and second features provide a technique whereby a message such as the second message of the "Wall Street Week" program can take affect at only selected stations (such as those stations preprogrammed with decryption key J) without being decrypted at said stations. (Hereinafter, this technique is called "covert control.") ('277C157L21-C158L3)

Based upon these passages, it seems likely that the applicants intended, when they used the terms decryptor and decryption in the claims, to exclude alternative methods such as varying the pattern of the composition, timing, and location of embedded signals. It also seems likely that

they did not intend for those terms to encompass known scrambler/descrambler apparatus unless that apparatus actually works on a principle of coding and decoding according to an algorithm, using a key.[11] Indeed, the most reasonable view of the specification, considering all of the many, many occurrences of the word-forms "decrypt," "technique," and "pattern," is that the inventors were telling those skilled in the art that, when they encountered those words in the claims, they should understand them to mean respectively "decode," "algorithm," and "key." This, rather than some broader understanding.

Neither of the parties' experts will be perfectly comfortable with this definition. Prof. Dickinson suggested that "key" should be defined as some finite set, to distinguish conventional descramblers (Tr. 202-06, 214-16). This, with all respect, would be more likely to confuse the jury than assist it. Defendants' expert, Mr. Stubbs, attempted to make "technique" synonymous with an "overall method to accomplish decryption." But this broke down when he admitted that changing either the algorithm or the key, both of which he regarded as included in the "pattern," would likewise change the "technique," thus rendering the terms "pattern" and "technique" redundant. (Stubbs Declaration, ¶35: "Based on the meaning of 'decryption technique as discussed above, a change in the 'decryption technique' can be accomplished by changing any of the 'decryption pattern' (i.e., the algorithm, key, composition, timing and location of embedded signals) and/or other aspects of the overall method of decryption * * * "; Tr. 282)

Accordingly, it is recommended that this limitation be construed to mean that the controller causes the decryptor to alter its decoding algorithm or key. The Court may wish to instruct the jury that algorithm means a process or set of rules to be followed in

[11] For example, the patent refers to "conventional descramblers, well known in the art, that descramble analog television transmissions and are actuated by receiving digital key information." ('277 C174L66-C175L1; emphasis added.)

calculations or other problem-solving operations, especially by a computer, and that key, in this context, means a variable that is used in the algorithm.

J. The '243 Patent

The Related Prosecutions

At the outset, it bears repeating that defendants have made a painstaking analysis of the prosecution of many of the related applications that are pending in the PTO. The results of this analysis are reflected in the Broderick declarations and the appendix to their responsive brief on the '243 patent. The very limited role that such evidence has to play in this Markman proceeding requires some explanation.

The first paragraph of 35 U.S.C. §112 demands "a written description of the invention." The written description must be detailed enough to enable one of ordinary skill in the art to practice the invention, and it must also provide support for the limitations of the claim.[112] In evaluating a written description for claim support, "[t]he description must be sufficiently clear that persons of skill in the art will recognize that the applicant made the invention having those limitations."[113] The second paragraph of §112 requires that the claim particularly point out and distinctly claim the subject matter that the inventor regards as his invention. This "definiteness inquiry focuses on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the rest of the specification."[114] Thus, it is entirely possible that the fact that several examiners in the prosecution of related applications rejected, on grounds of indefiniteness, claims that were the same as or similar to those at issue here might have relevance to a facial attack on the '243 claims under §112¶2. Similarly, the fact that, as alleged by

[112] E.g., Enzo Biochem Inc. v. Gen-Probe Inc., 296 F.3d 1315, 63 USPQ2d 1609 (Fed. Cir. 2002).
[113] Martin v. Mayer, 823 F.2d 500, 3 USPQ2d 1333, 1337 (Fed. Cir. 1987).
[114] Union Pac. Res. Co. v. Chesapeake Energy Corp., 236 F.3d 1625, 57 USPQ2d 1293, 1297 (Fed. Cir. 2001).

defendants, the applicants have taken inconsistent positions with respect to specification support for identical or similar limitations in the course of the various prosecutions, might have relevance to an attack on the adequacy of the written description under §112¶1. But those issues are beyond the scope of the Court's reference to the SM.

Defendants make an argument that has at least some superficial appeal. Essentially, their argument is that, when required by PTO examiners in related prosecutions to identify specification support for claim limitations, the applicants repeatedly adopted positions inconsistent with their positions on support for the same or similar limitations in the present litigation. They particularly focus on certain limitations of the '243 claims. From this they argue that:

> Where, as here, a patentee (or applicant) keeps shifting his story when asked by an adverse litigant (or by the PTO) to identify his specification support for claim language identical to that which is here in issue, the fact that he fails, again and again, to give a stable, consistent answer suggests that *the alleged inventor himself does not really know what the answer is, because he does not really know what the claim reads on.* This is the very definition of claim indefiniteness -- that a person experienced in the field of the invention would *not* understand the scope of the subject matter that is claimed when the claim is read in conjunction with the specification. (*See* Plaintiffs' Opening Brief ("Pls.' Br.") at 25 and 32 n.13.) The fact that the patentee/applicant keeps changing his story about where in the specification the applicable written description lies is a damning fact -- not only because it suggests that an adequate written description does not exist, but also, and more importantly for today's purposes, because it suggests that he cannot figure out what his own claim covers. (DRB '243 pp. 2-3; emphasis present)

The deficiencies in this argument are immediately apparent. First, it presumes that there can only be a single example of support in the specification for a given claim limitation. But that would be true only if it were clear, to a person of ordinary skill in the art, that the alternative examples relied on in various prosecutions by the applicants were somehow mutually exclusive. That, obviously, is something that cannot and should not be resolved in the context of a claim construction proceeding.

Second, this argument ignores the current claim construction methodology of the Federal Circuit, which is to attempt to discern ordinary meaning without reference to the specification, and to refer to the specification only thereafter, either to resolve lingering ambiguities or to determine whether the inventor has altered or disavowed the ordinary meaning. Specification support has little to do with that exercise. For example, with respect to the "instruct-to-react signal" limitation in claim 21 of the '243 patent, defendants assert that it "is not a term of art, did not and does not have any conventionally recognized and understood meaning in the art at the relevant time period, and is not defined nor explicitly explained in the specification." (DRB '243 p. 19) From this they conclude that, "[s]ince the phrase is not commonly understood, nor defined or clearly explained in the specification, claim 21 fails as indefinite." (Id. at p. 26) But this tidy logical construct fails to take into account the possibility that the *ordinary meaning of the words themselves* – never mind the lack of any special meaning in the art, or contrary inventor lexicography in the specification – clearly informs the reader what is meant. As will be seen below, that is exactly the case with respect to the term "instruct-to-react signal."

That leaves the one issue to which the prosecution of the related applications might be relevant here: claim construction. It is of course true that, when multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation.[115] But that does not describe the precise situation at bar. Here, defendants are offering evidence of prosecution transactions in applications that have not yet issued as patents. Thus, the only evidence relating to claim construction is the positions that the applicant and the PTO may have taken with respect to the meaning of claim language that is identical or similar to that being

[115] Biovail Corp. Int'l v. Andrx Pharm. Inc., 239 F.3d 1297, 57 USPQ2d 1813, 1816 (Fed. Cir. 2001).

contested in the '243 claims. Considered in this light, the real relevance is not that plaintiffs adopted a particular position regarding claim construction during related prosecution. Rather, the relevance emerges only if such a position appears to be inconsistent with a position that plaintiffs are taking here. And even then, it is difficult to see how such evidence could be regarded as conclusive, for we are again mindful that claim construction is an obligation of the court that is independent of the views asserted by the adversary parties.[116]

Nonetheless, evidence of clear inconsistency on the part of plaintiffs might well be regarded as a significant factor in arriving at a legal conclusion on claim construction, even though not determinative. The SM suspects that the Court had this in mind when it advised the parties that

> it would serve the interests of justice for the Court to know whether inconsistent positions have been taken by the plaintiff before the PTO. It may well serve the interests of all concerned in this courtroom today to have someone appointed who could devote his or her time exclusively to this issue. (Broderick II ¶9)

It seems highly likely, also, that the Court was not interested in identification of possible inconsistencies in relation to invalidity defenses like indefiniteness and lack of support, but only in relation to the task at hand: claim construction.

Plaintiffs argue that reference to these transactions from related prosecutions is inappropriate on two grounds: they are extrinsic evidence and they are hearsay. (PRB pp. 78-80) Neither of these objections has any merit. Any statements that applicants made in the related prosecutions are not being offered for their truth, because the truth of the assertion is immaterial here. They are, rather, being offered simply to show that they were in fact made, after which defendants will attempt to demonstrate that they are inconsistent with the present positions taken by plaintiffs. Thus, the statements are not hearsay. There is no question but that these statements

[116] Exxon Chem. Patents Inc. v. Lubrizol Corp., 64 F.3d 1553, 35 USPQ 1801, 1802 (Fed. Cir. 1995).

are extrinsic. As plaintiffs point out, the related prosecution histories are not part of the public patent record until the patents issue; they would be unavailable to those who might be interested in their possible impact upon construction of the claims of the patents in suit. Nonetheless, extrinsic evidence is not legally forbidden territory in claim construction. If evidence of a transaction from a related prosecution clearly demonstrates that plaintiffs are speaking from both sides of their collective mouths about the meaning of a particular claim term, it is something the Court may well want to know about, extrinsic or no. The impact of any such inconsistencies has to be dealt with on a limitation-by-limitation basis.

General Observations Regarding Patent Claim Jargon

The claims of the '243 patent are written in what might be called – in an effort to avoid a more pejorative term – "patentese." That is to say, they are not likely to be readily understood by persons unused to reading patent claims. Although this is not atypical, the problem strikes the SM as particularly acute in the case of the '243 patent. Indeed, it may well be at the heart of defendants' generalized attack on the adequacy of the claims under 35 U.S.C. §112¶2.

With the expectation that some of this "patent lawyer jargon" may confound the jury if left untranslated, the SM has in a few instances proposed plain English alternatives that the Court may wish to include in the jury instructions.

Generalized Indefiniteness Arguments.

In addition to their specific indefiniteness arguments about the typographical errors in claims 14 and 21, defendants mount a more general attack on the overall language and structure of the '243 claims. This presents a more serious question of compliance with §112¶2, for it comprehends much more than obvious misprints or typographical errors – it questions the underlying logical framework of the claims themselves, and suggests that those skilled in the art

would not understand what is being claimed. This amounts to a direct facial attack on the validity of the '243 claims.

In analyzing defendants' position on this matter, the SM has been mindful of Judge Sleet's admonition in the Pharmastem case that a Markman proceeding should not be regarded as the appropriate vehicle for dispositive rulings pursuant to §112¶2. Accordingly, the question at hand is whether the '243 claims are sufficiently definite to survive claim construction. Only if the SM should conclude, in the words of the Exxon case, that the claims are "insolubly ambiguous, and no narrowing construction can properly be adopted,"[117] would the SM be justified in recommending that the Court consider their validity, under §112¶2, in the context of an appropriate dispositive motion.

As will be seen below, the SM finds no insoluble ambiguities in any of the specific limitations of the claims. Whether the claims, read in their entirety in view of the recommended construction of those specific limitations, adequately set forth the subject matter that the applicants regarded as their invention, is quite another question, for another day. Suffice to say here that the claims can be construed, and thus meet the Pharmastem test.

One is tempted to try to illustrate the lack of insoluble ambiguity by constructing a wholesale "translation" of these claims into language that might be more understandable to laypersons who are not patent lawyers. But such an approach is inapplicable to the actual construction of the claims. It is not the function of the courts to rewrite patent claims. Courts cannot alter what the patentee has chosen to claim as the invention. No matter how great the temptations of fairness or policy making, courts do not rework claims. They only interpret them.[118]

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[117] Exxon Res. & Eng'g Co. v. United States, 265 F.3d 1371, 60 USPQ2d 1272, 1276 (Fed. Cir. 2001).
[118] Intervet Am. Inc. v. Kee-Vet Labs. Inc., 887 F.2d 1050, 12 USPQ2d 1474, 1476 (Fed. Cir. 1989).

Construction of Specific Terms

"Subscriber station information." Plaintiffs argue that this phrase is not a limitation because it appears in the preamble of claim 14. (PRB pp. 94-95) The SM disagrees, because it appears to lie at the heart of the claimed invention, which is a method of communicating subscriber station information. That said, there is no warrant for giving the words anything other than their ordinary meaning, which is information to, from, or about a subscriber station. **This limitation needs no construction.**

The parties have agreed that a "subscriber station" includes "local affiliate broadcast stations that receive and retransmit single network transmissions; cable system headends that receive and retransmit multiple network and local broadcast station transmissions; and media centers in homes, offices, theaters, etc. where subscribers view programming." (Joint Chart pp. 53-54) Although the SM is leery of using dozens of words where one or two will do, on the possibility that something may be excluded thereby, or that the jury may become confused, in this particular instance no potential for real harm is apparent. **Accordingly, the Court may wish to so instruct the jury.**

"Remote data collection stat [*sic:* station] and "process or [*sic:* processor]." It is clear from the prosecution history that the term "stat" found its way into claim 14 as a result of a typographical or printing error; it should have been printed as "station." (See FH 001733, 001932) So too with "process or" in claim 21; it should have been one word: "processor." (See FH 001936) Both sides agree. (PIB pp. 143, 159; DIB '243 p. 30) Nonetheless, defendants' initial brief on the '243 patent devotes some five pages (pp. 30-34) to the remarkable proposition that the claims must be construed with obvious errors intact and "in that form they are indefinite

under 35 U.S.C. §112¶2." (DIB '243 p. 33) The discussion earlier in this report dealing with a similar error in claim 4 of the '490 patent is fully applicable here, and disposes of this contention. **Accordingly, the word "stat" in claim 14 should be read to mean "station" and the words "process or" in claim 21 should be read to mean "processor."**

"One of a viewer's and a participant's reaction." Defendants argue vigorously and at length that a reader of this claim cannot know the difference, if any, between a "viewer" and a "participant," or even what they are. (DRB '243 pp. 9-13) They obviously feel strongly about this issue, for they employ such words as "bizarre," "grotesque," "outlandish," "farce," and "preposterous" to describe plaintiffs' efforts to illustrate how claim 14 is supported by the specification. The problem with defendants' position here, however, is just that. Whether a claim limitation is supported by the specification and what it means to a person of ordinary skill are two entirely different questions. Plaintiffs may indeed run into serious trouble if they are ever required to explain what the specification provides in the way of support for the terms "viewer" and "participant." That is a matter upon which the SM expresses no views.

But the task at hand is to determine what these ordinary words mean in the context of the claim. A viewer is one who views. A participant is one who participates. To worry about precisely what is being viewed or participated in is, in the context of claim 14, is simply not an issue, for the claim later tells us: "a mass medium program." **This limitation should be construed to mean the reaction of a viewer of a mass medium program, or of a participant in a mass medium program.**

"Information that designates one of an instruct signal to process and an output to deliver in consequence of subscriber input. Defendants' principal attack on this limitation invokes what it calls the "inoperativeness conundrum." (DIB '243 pp. 23-24) Basically this goes as follows:

The received information must designate either an instruct signal to process or an output to deliver. If it designates the former, then the 4th step of the claim ("processing said instruct signal) can be completed. If, however, the received information designates only the "output to deliver," then the 4th step cannot take place, for there is no instruct signal to process. This, according to defendants, renders the claim inoperative and, apparently, indefinite as a consequence. The SM disagrees. All that defendants are doing is pointing out that if the accused infringing system never receives (or is incapable of receiving) information that designates an instruct signal to process, *it will not constitute an infringing use of the method defined by the claim.* Nothing could be more definite than that. **This limitation needs no construction; however, the Court may wish to instruct the jury that the information designates an output to deliver or a signal that is an instruction to be processed.**

"Processing said instruct signal which is effective to coordinate presentation of at least a mass medium program segment with a predetermined presentation sequence at said subscriber station in consequence of said step of determining." The parties agree that "coordinate" may relate to "time, location (place), fashion of playing, or manner of presentation." (Joint Chart p. 57). Against, although the SM sees no ambiguity in the word, it does not appear that these embellishments are likely to confuse the jury. On the other hand, defendants propose a very complex definitional alternative to the term "predetermined presentation sequence," citing specific examples from the specification. (Id.) Although there is no reason the jury could not be advised, through testimony and argument, that these examples correspond with the claim term, it seems dangerous to adopt such examples as definitions for purposes of claim construction.

The SM does feel that it might be well to attempt to eliminate the "patentese" from this limitation. **Accordingly, it is recommended that this limitation be construed to mean that,**

after determining the presence of subscriber input, the instruct signal is processed in a way that coordinates (with relation to time, location, place, fashion of playing, or manner of presentation) the presentation at the subscriber station of a mass medium program segment with a predetermined presentation sequence (any set of presentations in a predetermined sequence).

"Detecting one of the presence and the absence of one of a broadcast and a cablecast control signal." This opening step of claim 21 is pretty straightforward, and once the arguments of the parties are analyzed, their positions seem to be converging. The only real bone of contention has to do with the juxtaposition of the words "broadcast" and "cablecast." As discussed at length in connection with the "broadcast transmission means" limitation of the '414 patent, the specification is ambivalent, sometimes appearing to use "broadcast" as a synonym for "wireless," and sometimes in a more generic sense that would encompass both wireless and cablecast transmissions. In the context of claim 21 of the '243 patent, however, there can be little doubt as to what was meant. "Broadcast" does not mean "cablecast" because the consequent redundancy would render the limitation nonsensical. How could a choice be made between them if they were one and the same thing?

The parties are in agreement that, in the context of this limitation, "detecting" means simply determining the presence or absence of a control signal, and does not invoke all of the definitional baggage accompanying the use of the term in other claims of the patents in suit. **According, it is recommended that this limitation be construed to mean determining the presence or absence, at the receiver station, of a control signal sent by wireless or cablecast transmission.**

"Instruct-to-react signal." Defendants make a vigorous attack on this term, asserting that it has no specification support, citing numerous instances of alleged evasiveness by plaintiffs and much evidence of alleged inconsistency in dealing with this term in related patent prosecution. (DRB '243 pp. 27-31) They also argue that the term is indefinite. But as indicated previously, these are matters for another day. The question at hand is whether the limitation is insolubly ambiguous, and if it is not, how it is to be construed.

In the context of claim 21 as a whole, the SM finds the term to be self-defining. Its ordinary meaning is a signal that comprises an instruction to react. The claim makes it clear that the instruction is input to the processor in response to detecting either the presence or the absence of a broadcast or cablecast control signal. In response to that input, the processor outputs specific information that causes coordination of a program segment and a presentation sequence. Thus, any signal that would have this purpose and function is an instruct-to-react signal within the meaning of the claim. **This limitation needs no construction.**

Similarly, as used in claims 14 and 41, the term "instruct signal" is a signal that comprises an instruction. **This limitation needs no construction.**

"Datum designating one of a television channel and a television program" and "one of a television channel and a television program designated by said processed datum."

Dependent claim 30 adds the following limitations to claim 21: "wherein said processor processes a datum designating one of a television channel and a television program, said method further comprising the step of controlling a video recorder/player to one of record and play one of video and audio contained in said one of a television channel and a television program designated by said processed datum." To the uninitiated, this is quite a mouthful. Although it is typical "patentese," and therefore readily understandable to those used to reading claims, it may

be a bit much for a jury to decipher. "Datum" means nothing more than a piece of information. **Accordingly, the Court may wish to instruct the jury that this phrase simply means that the processor processes a piece of information that designates either a television channel or a television program, and the video recorder/player is controlled to record or play the video or audio contained in the television channel or television program that was so designated.**

Respectfully submitted,

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Special Master